

P-0534
December 13, 2021

Mr. Timothy Maus
Massachusetts Department of Environmental Protection
8 New Bond Street
Worcester, MA 01606

**Re: Quarterly Status Report
6 Town Hall Drive, Princeton
RTN 2-21072**

Dear Mr. Maus:

On behalf of the Town of Princeton (the "Town"), Tighe & Bond has prepared this Quarterly Status Report in accordance with the Massachusetts Department of Environmental Protection (MassDEP) Immediate Response Action (IRA) Plan Modification No. 3 Conditional Approval dated February 2, 2021. This quarterly status report is being submitted to provide supplemental information since the submittal of IRA Status Report No. 4 on September 7, 2021. A Site Plan is included in Appendix A, for reference.

Status of Private Well Sampling Schedules

In accordance with MassDEP's IRA Plan Conditional Approval No. 4, dated June 21, 2021, sampling of private wells with PFAS6 concentrations below 20 ng/L was reduced from quarterly to semi-annually. In addition, annual sampling was approved for potable wells with point-of-entry treatment (POET) systems and influent PFAS6 concentrations below 100 ng/L. Locations with POET systems and influent PFAS6 concentrations greater than 100 ng/L will be sampled semi-annually. POET monitoring on this schedule is currently approved until January 2023, at which time POET monitoring for the wells with concentrations greater than 100 ng/L will be completed quarterly until carbon breakthrough is detected. The last quarterly sampling event was completed in April 2021 as reported in the previous IRA Status report submitted on September 7, 2021.

October 2021 Semi-Annual Private Well Sampling

Semi-annual sampling of 79 potable wells was completed as part of the ongoing monitoring program between October 14 and November 17, 2021. Potable well samples were collected from the following locations. Please note that these locations all have been sampled at least once previously, with the exception of 18 Connor Lane and 68 Hubbardston Road.

- 9, 12, 15, 19, 20, 32, 33 Allen Hill Road
- 13, 17, 21, 24, 30, 32, 40 Boylston Avenue
- 6, 18 Connor Lane
- 4 Goodnow Road
- 11, 13, 14, 21, 44 Gregory Hill Road
- 7, 15, 19, 23, 33, 35, 36, 44, 46, 48, 52, 68, 73, 81 Hubbardston Road
- 55, 57, 59, 70, 85, 105 Merriam Road
- 2, 10, 14, 18, 19, 20, 21, 22, 33, 38, 58, 64 Mountain Road
- 11, 16, 17, 18, 21, 26 Prospect Street



- 2, 7, 8, 11, 13, 18, 23, 28, 29, 33, 37 Radford Road
- 7 Thompson Road
- 1, 10, 15, 16, 17, 20, 23 Worcester Road

Approximately 20 percent of the notification letters have been completed and sent to their respective property owners and are included in Appendix E of this status report. The remaining notification letters are being sent and copies will be submitted with the next IRA/Quarterly Status report. The laboratory data will also be provided to MassDEP electronically in a "zip" file, as requested in the February 2, 2021 Immediate Response Action Plan Modification No. 3 Conditional Approval.

Results Summary

Laboratory results indicate that PFAS6 concentrations were detected above the MCL at 14 Gregory Hill Road, and 7 and 35 Hubbardston Road. PFAS6 concentrations detected previously at these locations were slightly below the MCL. Installation of POET systems at these locations is pending scheduling with the homeowners.

Laboratory results indicate that PFAS6 concentrations at 13 Boylston Avenue, 11 and 13 Gregory Hill Road, and 48 Hubbardston Road were detected below the MCL while these properties were previously non-detect for PFAS6. Due to the new detections at these locations, bottled water is being provided by the Town. Based on the detection of PFAS6 at these locations the sample radius remains unchanged, as there are no new potable wells within 500 feet of those properties that have not previously been sampled.

The laboratory reports for the October/November 2021 potable well sampling that were received to date are included in the individual notification letters in Appendix E of this status report. The laboratory data will also be provided to MassDEP electronically in a "zip" file, as requested in the February 2, 2021 Immediate Response Action Plan Modification No. 3 Conditional Approval.

38 Boylston Avenue

The owner of 38 Boylston Avenue previously indicated that they did not want their potable well sampled and informed the Town that they installed their own POET system that consists of one granular activated carbon (GAC) vessel. Subsequent to Tighe & Bond sending a letter to the owner, we were contacted and granted access to collect an influent sample from this location. The potable well sample was collected on August 31, 2021 as a system influent sample. The laboratory results from this sample indicated PFAS6 at a concentration of 8.5 ng/L. Based on the detection of PFAS6 at this location the sample radius remains unchanged, as there are no new potable wells within 500 feet of this property that have not previously been sampled. The owner of this property was offered bottled water but stated that they did not wish to receive this service.

68 Hubbardston Road

The owner of 68 Hubbardston Road notified the Town that they had an outside laboratory test their potable well for PFAS and PFAS6 was detected above laboratory reporting limits but was below the MCL. Tighe & Bond collected a potable well sample from this location on November 17, 2021 to confirm the detection. The laboratory results indicated that PFAS6 was detected at a concentration of 5.9 ng/L, which is below the MCL. Because of this detection the owner of the property is being provided with bottled water by the Town.

The Radius Map (Figure 1) was updated to reflect the detection of PFAS at this property and three new properties (80 Hubbardston Road, and 7 and 13 Goodnow Road), were identified

as being within 500 feet of 68 Hubbardston Road. The Town of Princeton will notify the owners of these three properties and request permission to sample their potable wells. The PFAS sample results from these locations will be included in a future submittal.

Point-of-Entry Treatment System Status

POET systems are required for all locations with PFAS6 concentrations exceeding 20 ng/L. To date, 31 locations have been identified as requiring treatment. POET systems have been installed at 27 of these locations. With the detection of PFAS6 above the MCL at 14 Gregory Hill Road, 7 Hubbardston Road and 35 Hubbardston Road, POET systems are required. Those installations are currently pending. The property at 14 Mountain Road is currently registered as a public water supply, which requires a permit for POET installation. Tighe & Bond submitted the permit application and design to MassDEP on April 29, 2021. MassDEP approved the permit application and system design on July 2, 2021. Advanced Water Quality Systems of Charlton, Massachusetts is currently procuring the materials required for the installation but has indicated that the vessels are back-ordered with no estimated date of delivery. The Town will continue to provide bottled water to the church and signage is maintained at all fixtures indicating that tap water is "not for potable use."

POET Performance

POET system monitoring to date of midfluent and effluent samples has not detected breakthrough of the primary carbon vessel at any of the 27 locations where POETs have been installed. During the October 2021 semi-annual monitoring event, those locations that have a POET system and have, historically, maintained influent concentrations of PFAS6 greater than 100 ng/L were sampled and consist of:

- 15 Hubbardston Road
- 18, 19, 20, 21, 22, 58 and 64 Mountain Road

Once the POETs for 14 Gregory Hill Road, and 7 and 35 Hubbardston Road are installed, Tighe & Bond will collect midfluent and effluent samples at those locations within the first month of operation to verify the POETs are removing PFAS from the potable well as intended.

Town Hall Campus Well Quarterly Sampling

WhiteWater is the licensed operator for the Town Hall well. The PFAS treatment system for this well is currently being designed. All of the sinks in the four municipal buildings on the Town Hall campus have been labeled as "not for potable use" and bottled water is available in all of the buildings served by the well. During a Special Town Meeting on November 17, 2021, the town voted in favor of funding the installation. The status of this treatment system will be updated in subsequent status reports.

WhiteWater provided recent PFAS results for Town Hall Well samples collected on October 18, 2021. The PFAS6 concentration on that date was 366 ng/L and these results are included in Table 1, in Appendix C, and the associated laboratory reports obtained from White Water are included in Appendix D.

Notification of Environmental Sampling Results

In accordance with the MCP at 310 CMR 40.1403(10) a Notice of Environmental Sampling is required any time environmental samples are taken at a property in the course of investigating a release for which a notification to the Department has been made on behalf of someone other than the owner of the property, within 30 days of the date the sample results are issued by the laboratory. Status Table B-1 in Appendix B provides a summary of the dates that laboratory reports were received, the dates when public notifications are due, and

the dates when the notification letters were sent. Copies of the public notification letters sent since the submittal of IRA Status Report No. 4 are included in Appendix C. Copies of the BWSC-123 Forms and laboratory reports for the potable well sampling are included with the individual letters.

Verbal notifications of sample results were made within 24 hours to all residents with a new PFAS6 detection or exceedance of the MCL (along with the notifications to MassDEP, and Town of Princeton).

Phase II Subsurface Investigation Activities

22, 30, 54 Mountain Road

On October 27 and 28, 2021, Tighe & Bond used a GeoProbe® operated by Technical Drilling Services (TDS) of Sterling, Massachusetts to advance 43 soil borings at 22, 30, and 54 Mountain Road. The purpose of the soil borings was to assess the horizontal and vertical extent of PFAS impacted soil and determine depth to bedrock in those areas. 13 soil borings were advanced at 22 Mountain Road, 16 soil borings at 30 Mountain Road and 14 borings at 54 Mountain Road. Discrete soil samples were collected from the 6-12 inch and 12-24-inch depth intervals below surface grade (bsg) at the locations where shallow surface soil samples were previously collected at these properties. Soil samples at locations with no previous shallow soil samples were collected from 0-12 inch and 12-24 inch depth intervals bsg. In general, bedrock was encountered 12 to 24 inches bsg at 22 Mountain Road, 12 inches bsg at 30 Mountain Road and 12-18 inches bsg at 54 Mountain Road.

In addition to the soil borings advanced at those locations, two surface soil samples were collected from the basement of 22 Mountain Road. The previously-sampled basement locations at the 30 Mountain Road building where samples were collected from 0-6 inches bsg in May 2021 were revisited to obtain deeper samples. Due to shallow bedrock, an additional 2 inches of depth was reached at 30MTN Basement-1 (6-8) and an additional six inches of depth was reached at 30MTN Basement-2 (6-12).

In total, 52 soil samples were submitted to Pace Analytical (Pace) in East Longmeadow, Massachusetts for PFAS analysis using the isotope dilution method. Soil sample locations are shown on the attached Soil Sample Plans included in Appendix A.

Based on a review of the laboratory data, PFAS6 compounds were detected in subsurface soil at all three properties above MCP Method 1 S-1/GW-1 Soil Standards. In general, the PFAS6 compound soil standards are exceeded throughout the vertical soil column to bedrock at the majority of soil sample locations where PFAS6 compounds were detected.

As indicated in prior status reports, IHEs were conducted to evaluate the results for the shallow soil samples collected at 22 Mountain Road and 30 Mountain Road. The IHE for 22 Mountain Road calculated Hazard Indices (HI) of 0.02, 0.008 and 0.007 for children, youth and adults (future residents), respectively, and 0.02 for a construction worker. HI values calculated for 30 Mountain Road were 0.06, 0.02 and 0.02 for children, youth and adults (future residents), and 0.05 for a construction worker. The PFAS concentrations in the recent soil samples are slightly higher than the concentrations detected in the shallow soil data used in the IHE, so an updated IHE is being prepared. However, where the HIs calculated in the initial IHEs were well below the HI limit of 1, it is anticipated that the updated IHE will also indicate that no Imminent Hazard is present, but appropriate steps and notifications will be made if the updated IHE shows the presence of an IH condition. The updated IHE will be provided in the next Status Report.

In addition, six samples representing the two dominant soil types and ranges of PFAS concentrations were submitted to Con Test for synthetic precipitation leaching procedure (SPLP) extraction. The extractant will be subsequently analyzed for PFAS using the same analytical method as the original soil samples to evaluate what fraction of the total PFAS in soil is potentially leachable to groundwater. These analyses are currently in-process.

PFAS was not detected in any equipment blanks or field blanks collected during the soil sampling event.

Laboratory results for the soil samples collected on October 27 and 28, 2021 are summarized in Table 2 included in Appendix E. The complete laboratory reports are also included in Appendix E.

30 Mountain Road Soil Piles

During renovation activities completed by the property owner at 30 Mountain Road after the fire in 2017, two soil piles were generated from material removed from around the building where the 2017 fire took place. The soil piles are located west of the former building and to the northwest of an existing garage building. Both piles were observed to contain a large volume of boulders and granite blocks and are estimated to contain 75 to 100 cubic yards of material each. The locations of the soil piles are shown on the attached Soil Sample Plan included in Appendix A.

On October 29, 2021, Tighe & Bond collected one composite soil sample from each soil pile. The samples are identified as Soil Pile-1 and Soil Pile-2. Both soil samples were submitted to Pace for PFAS analysis by the isotope dilution method. Based on the laboratory results, the PFAS6 compound concentrations were below Method 1 S-1/GW-1 Soil Standards in Soil Pile-1 (note that the soil standards are for the individual PFAS6 compounds, they are not summed like PFAS6 for water). Soil Pile-2 contained PFOS (5.7 µg/kg) above its Method 1 S-1/GW-1 Soil Standard of 2 µg/kg. The other PFAS6 compounds were either not detected or did not exceed their S-1/GW-1 standards in Soil Pile-2.

Laboratory results for the soil samples collected from Soil Pile-1 and Soilpile-2 are summarized in Table 2 included in Appendix E. The complete laboratory reports are also included in Appendix E.

18, 19, 21 Mountain Road

Due to reports of the firefighting water and foam running downhill from 30 Mountain Road onto the properties at 18, 19 and 21 Mountain Road during the event on May 2017, arrangements were made to access these properties for soil sampling. On November 17, 2021, Tighe & Bond collected six surface soil samples around the residence at 18 Mountain Road, five surface soil samples around the residence at 19 Mountain Road, and seven surface soil samples around the residence at 21 Mountain Road. The soil samples were collected using hand tools from 0-6 inches bsg. Laboratory results for the soil samples collected on November 17, 2021 are currently pending and will be reported to the owners and MassDEP and copies will be included in the next IRA Status Report.

Town Campus

On October 29, 2021, Tighe & Bond collected two surface soil samples (Library-1 and Library-2) from 0-6 inches below grade in the landscaped area west of the town Library. The samples were collected using the same method as the samples at 18, 19, and 21 Mountain Road and were submitted for PFAS laboratory analysis. Based on the results, PFOS was detected in the sample collected at Library-1 (0.48 µg/kg), below Method 1 S-1/GW-1 Soil Standard of 2

µg/kg. PFHxS was detected in the soil sample collected at Library-2 (1.2 µg/kg) which is above the Method 1 S-1/GW-1 Soil Standard of 0.3 µg/kg.

Laboratory results for the soil samples collected from Library-1 and Library-2 are summarized in Table 2 included in Appendix E. The complete laboratory report is also included in Appendix E. The soil sample locations for Library-1 and Library-2 are shown on the Soil Sample Plan included in Appendix A.

Surface Water Sampling

Schoolhouse Pond and Airport Pond

On October 18, 2021, Tighe & Bond collected surface water samples from Schoolhouse Pond and Airport Pond, which are located within the surface water drainage area influenced by surface water runoff from the vicinity of the Town Hall campus and 30 Mountain Road. Both of these ponds are available to draw firefighting water by the Princeton Fire Department, which maintains hose connections at each pond.

Since PFAS will preferentially form films at the air-water interface, the surface water samples were collected using a peristaltic pump and dedicated (non-Teflon) tubing at the surface and below the surface to evaluate PFAS distribution. The tubing was submerged approximately 1 inch below the surface during surface sample collection. Using new tubing after collection of the shallow sample, the tubing was then weighted with stainless steel weights and submerged to the bottom of the surface water body. Once at the bottom, the tubing was raised slightly to avoid the collection of sediment or organic debris and a second sample was collected. Each sample is identified as "shallow" or "deep". For Schoolhouse Pond, the deep sample was collected at approximately 3.5 feet below the surface of the water. Depth of water at Airport Pond was measured at approximately 4 feet below the surface. The shallow and deep samples collected at each surface water body were submitted for PFAS laboratory analysis. The expanded list of 34 compounds was requested for these samples. Schoolhouse Pond and Airport Pond are shown in the Site Plan included in Appendix A.

Based on the laboratory results, no PFAS compounds were detected above MassDEP Surface Water Quality Benchmarks. However, the PFAS6 results for Schoolhouse Pond, both the Shallow and Deep samples, exceed the GW-1 standard for PFAS6 of 20 ng/L. Airport Pond results were below the GW-1 standard. The ability to limit the use of the water from Schoolhouse Pond for firefighting is being evaluated with the Town. Laboratory results for the surface water samples collected from Schoolhouse and Airport Ponds are summarized in Table 3, included in Appendix F. The complete laboratory report is also included in Appendix F.

Quarterly Stormwater Sampling

In accordance with the IRA Plan Modification No. 3 Conditional Approval dated February 2, 2021, seasonal stormwater sampling was completed near 30 Mountain Road on October 27, 2021. A stormwater sample was not collected from the 41 Prospect Street drainage area as no flow was observed on October 27, 2021.

No PFAS compounds were detected in the runoff samples collected in April 2021 and July 2021 from the 41 Prospect Street drainage area. Surface water near 41 Prospect Street appears to accumulate from the hillside west of the residence, flowing through a manmade drainage swale which flows northeast towards 59 Merriam Road, whereas surface water flow from 30 Mountain Road appears to flow, generally, to the southeast along Mountain Road away from 41 Prospect Street. Accordingly, further sampling of runoff in the area near 41 Prospect Street is not recommended.

The 30 Mountain Road runoff sample was collected from water that was flowing off the 30 Mountain Road property and over the exposed bedrock face along Mountain Road during a heavy rain event on October 26 through 27, 2021. This is the same bedrock face where water flowing from a pipe was previously sampled in March 2020 (the pipe was sealed by the 30 Mountain Road property owner in April 2020).

Laboratory results for the 30 Mountain Road runoff sample indicated that PFAS6 concentrations were detected at 1,567.7 ng/L. These results are lower than previous sample results. An Imminent Hazard evaluation performed on the March 2020 results showed no IH condition; therefore, we can conclude that the October 2021 results also do not meet the threshold for an IH condition. Laboratory results for the stormwater sample collected on October 27, 2021 are summarized in Table 3, included in Appendix F. The associated laboratory report is also included in Appendix F.

Gregory Hill Spring

Gregory Hill Spring is located on Town conservation land which is located northeast of Prospect Street and extends to Merriam Road and Gregory Hill Road. The spring is located in the vicinity of 57 Merriam Road and historically served the Town Campus. The spring is accessible to the public and anecdotal information indicates that the Spring is used as a drinking water source. Therefore, Tighe & Bond collected a water sample from the Spring on October 18, 2021 for PFAS analysis. The location of Gregory Hill Spring is shown on the Site Plan included in Appendix A.

Based on the results of the water sample collected at Gregory Hill Spring, PFAS6 was not detected above laboratory reporting limits. Laboratory results are summarized in Table 1, included in Appendix A. The complete laboratory report is included in Appendix G.

Town Campus Groundwater Monitoring

On September 22, 2021 monitoring wells MW-6, MW-7DRR, MW-10A, MW-10D, MW-14, MW-18R, MW-101 and MW-102 were sampled for PFAS analysis. The groundwater analytical results for the samples collected indicate PFAS6 concentrations above the Method 1 GW-1 Groundwater Standard of 20 ng/L in all eight samples collected from the monitoring wells. The most elevated PFAS6 concentrations were detected in MW-101 (506.2 ng/L) and MW-102 (1,309.2 ng/L) which are the shallow bedrock wells at the Town Hall campus (all of the other wells are overburden wells). The monitoring well locations are shown on Figure 3 included in Appendix A.

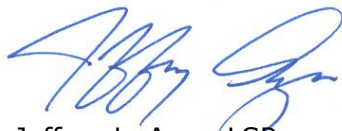
PFAS was not detected in the equipment blank or field blank collected during the groundwater sampling event.

Laboratory results for the groundwater samples collected on September 22, 2021 are summarized in Table 1, included in Appendix B. The laboratory report for the groundwater samples are included in Appendix H.

If you have any questions or require additional information, please contact me at 413.572.3227.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

cc: Sherry Patch, Town of Princeton

Appendices

Appendix A – Figure 1 – Radius Map

Figure 2 – Soil Sample Plan

Figure 3 – Town Campus Monitoring Well Location Plan

Appendix B – Table 1 – Potable Well Analytical Data Summary

Appendix C – October 2021 Potable Well Sampling Summary

POET Status Summary

Public Notification Letters (submitted under separate cover due to file size limitations), *includes laboratory reports*

Appendix D – Town Hall PWS Laboratory Report

Appendix E – Table 2 – Soil Sample Analytical Data Summary

Soil Sample Laboratory Reports

Appendix F – Table 3 – Surface Water Analytical Data Summary

Surface Water Laboratory Reports

Appendix G – Gregory Hill Spring Laboratory Report

Appendix H – Town Campus Groundwater Laboratory Report

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Tighe&Bond

APPENDIX A

ORTHOPHOTOGRAPH SITE PLAN

LEGEND

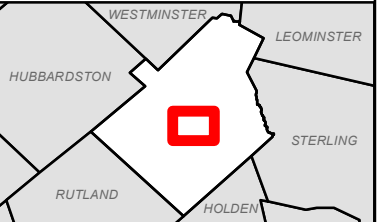
Total Regulated PFAS Concentrations in Parts-Per-Trillion (ppt)

- Greater Than 100
- Greater Than 20 But Less Than 100
- Greater Than 2 But Less Than 20
- Non Detect (<2)
- Non-Community Transient Public Water Supply
- ⊖ 500' Radius (2021/11/30)

Affected Property Labels:

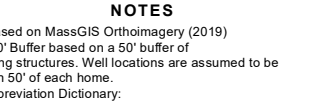
- (Point of Entry Treatment, if present)
Address
PFAS 6-Compound Total

LOCUS MAP

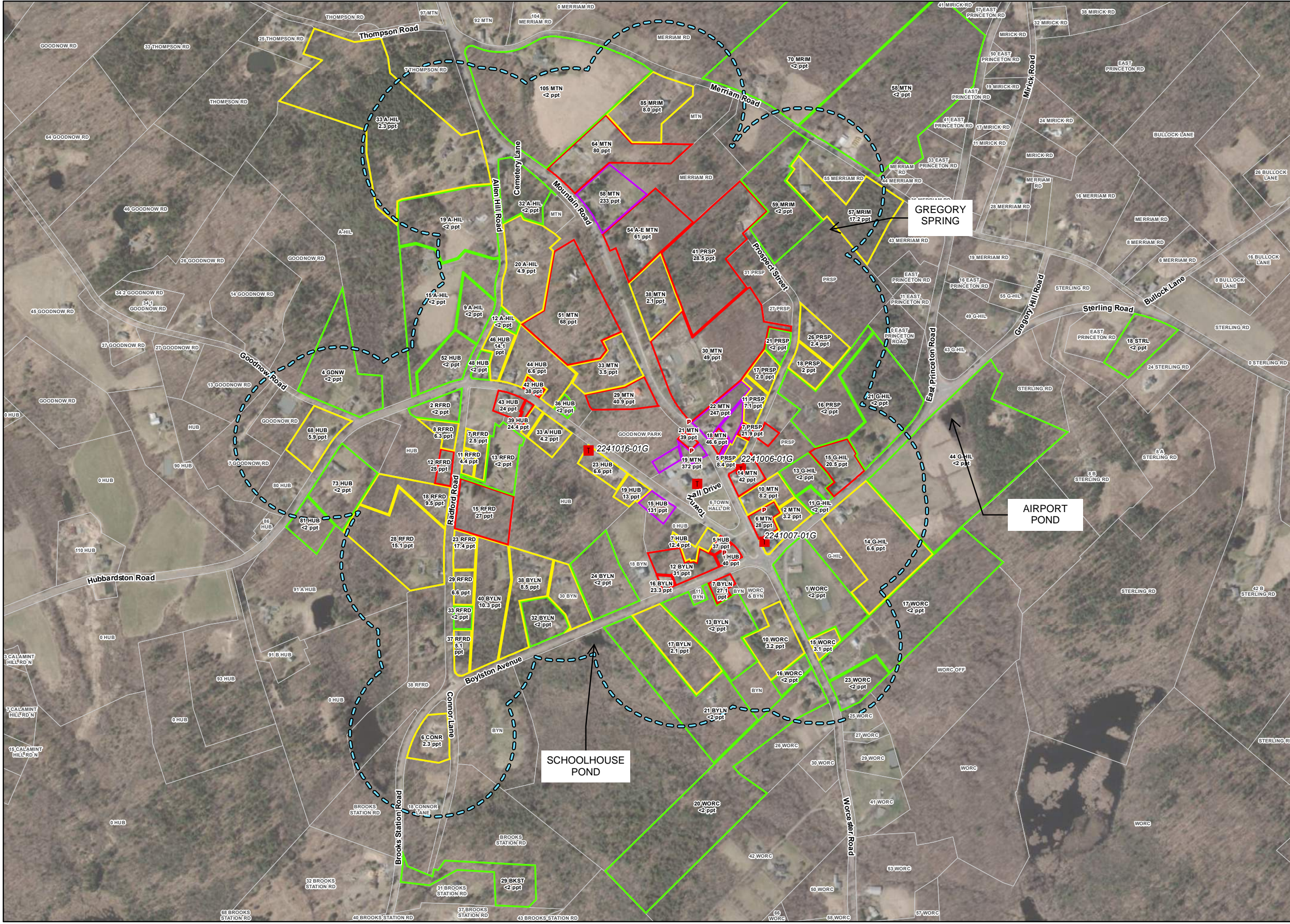


NOTES

1. Based on MassGIS Orthoimagery (2019)
2. 500' Buffer based on a 50' buffer of building structures. Well locations are assumed to be within 50' of each home.
3. Abbreviation Dictionary:
 "ALLEN HILL RD": "A-HIL"
 "BOYLSTON AVE": "BYLN"
 "GREGORY HILL RD": "G-HIL"
 "HUBBARDSTON RD": "H-HUB"
 "MOUNTAIN RD": "MTN"
 "PROSPECT ST": "PRSP"
 "RADFORD RD": "RFRD"
 "WORCESTER RD": "WORC"
 "MERRIAM RD": "MRIM"
 "GOODNOW RD": "GDNW"
 "CONOR LN": "CONR"
 "GREGORY RD": "GRGY"
 "STERLING RD": "STRL"
 "RALPH RD": "RLPH"



Princeton, Massachusetts
November 2021

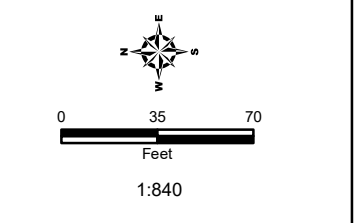
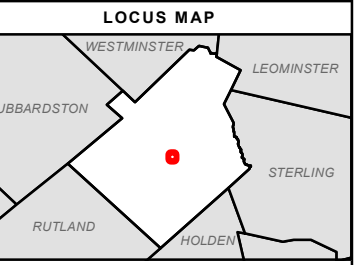




SOIL SAMPLE PLAN

LEGEND

- Surface Water Sample
- Soil Boring Locations
- Non-Community Transient Public Water Supply
- Princeton Parcels








- NOTES**
1. Based on MassGIS Orthoimagery (2019)
 2. Soil Borings collected by Tighe & Bond (October 2021)
 3. Parcels by the Town of Princeton (FY2020)

Princeton, Massachusetts
December 2021



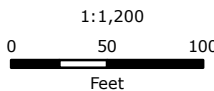


Legend

-  Soil Boring Locations
-  Non-Community Transient Public Water Supply
-  Site Parcel
-  Approximate Parcel Boundary
-  Municipal Boundary

Tighe & Bond

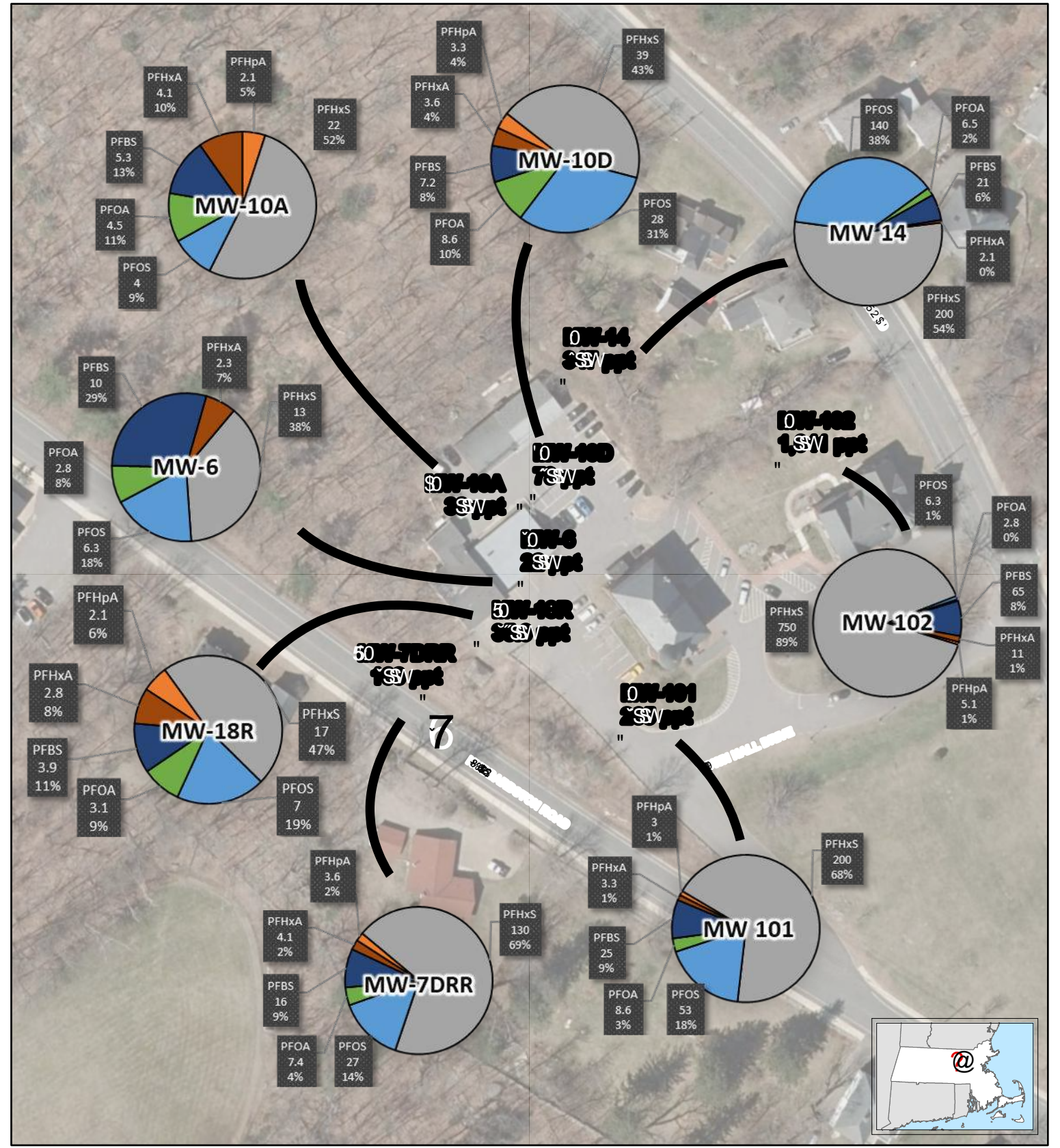
Based on MassGIS Color Orthophotography (2019) and Approximate Parcels from MassGIS, by the town of Princeton (FY2020)



SOIL SAMPLE PLAN

54 Mountain Road
Princeton, Massachusetts

December 2021



W&W
 & WHLQ
 " BQWRULQDO

GROUNDWATER MONITORING WELL LOCATIONS AND DISTRIBUTION OF PFAS CONCENTRATIONS BY COMPOUND

Town of Princeton
 6 Town Hall Drive
 Princeton, Massachusetts
 RTN 2-21072



DJK

Tighe&Bond

APPENDIX B

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	Old Town Hall Well
Well Depth (feet)		UNKNOWN
Sampling Date		1/19/2021
EPA 537.1 (ng/L)		
Perfluorobutanesulfonic acid (PFBS)		38
Perfluorohexanoic acid (PFHxA)		11
Perfluorohexanesulfonic acid (PFHxS)		250
Perfluoroheptanoic acid (PFHpA)		4.8
Perfluorooctanoic acid (PFOA)		17
Perfluorooctanesulfonic acid (PFOS)		150
Perfluorononanoic acid (PFNA)		ND(1.82)
Perfluorodecanoic acid (PFDA)		ND(1.82)
N-EtFOSAA		ND(1.82)
Perfluoroundecanoic acid (PFUnA)		ND(1.82)
N-MeFOSAA		ND(1.82)
Perfluorododecanoic acid (PFDoA)		ND(1.82)
Perfluorotridecanoic acid (PFTrDA)		ND(1.82)
Perfluorotetradecanoic acid (PFTA)		ND(1.82)
Total (All Compounds)		470.8
Regulated Total	20	421.8

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Containment Level

TABLE 1
 PFAS Drinking Water Summary
 Princeton, Massachusetts
 RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	Town Well (WELL-01G)										
		UNKNOWN										
		9/5/2019	9/27/2019	1/8/2020	6/23/2020	9/29/2020	9/29/2020	12/22/2020	2/17/2021	6/15/2021	8/10/2021	10/18/2021
							RERUN					
EPA 537.1 (ng/L)												
Perfluorobutanesulfonic acid (PFBS)		26.9	17	31.9	16.1	39.5	42.9	48.6	41.6	34.5	14.0	40.1
Perfluorohexanoic acid (PFHxA)		ND (1.82)	ND (1.87)	2.86	1.48 (J)	2.92	4.51	5.1	5.45	4.14	1.72 (J)	4.62
Perfluorohexanesulfonic acid (PFHxS)		94.4	78.1	168	81.7	234	225	329	305	224	90.9	249
Perfluoroheptanoic acid (PFHpA)		ND (1.82)	ND (1.87)	2.47	1.25 (J)	1.30 (J)	1.9	4.27	4.67	2.09	1.15 (J)	3.56
Perfluorooctanoic acid (PFOA)		3.92	3.18	9.52	4.48	8.4	12.3	15.9	14.6	10.8	5.32	13.1
Perfluorooctanesulfonic acid (PFOS)		26.4	18.9	52.6	23.5	56.4	67.4	94.2	86.2	71	30	99.9
Perfluorononanoic acid (PFNA)		ND (1.82)	ND (1.87)	ND (1.84)	ND (1.90)	0.555 (J)	0.985 (J)	0.904 (J)	1.17 (J)	0.769 (J)	ND (1.80)	0.91 (J)
Perfluorodecanoic acid (PFDA)		ND (1.82)	ND (1.87)	ND (1.84)	ND (1.90)	ND (1.85)	ND (1.90)	ND (1.81)	ND (1.77)	ND (1.83)	ND (1.80)	ND (1.80)
N-EtFOSAA		ND (1.82)	ND (1.87)	ND (1.84)	ND (1.90)	ND (1.85)	ND (1.90)	ND (1.81)	ND (1.77)	ND (1.83)	ND (1.80)	ND (1.80)
Perfluoroundecanoic acid (PFUnA)		ND (1.82)	ND (1.87)	ND (1.84)	ND (1.90)	ND (1.85)	ND (1.90)	ND (1.81)	ND (1.77)	ND (1.83)	ND (1.80)	ND (1.80)
N-MeFOSAA		ND (1.82)	ND (1.87)	ND (1.84)	ND (1.90)	ND (1.85)	ND (1.90)	ND (1.81)	ND (1.77)	ND (1.83)	ND (1.80)	ND (1.80)
Perfluorododecanoic acid (PFDoA)		ND (1.82)	ND (1.87)	ND (1.84)	ND (1.90)	ND (1.85)	ND (1.90)	ND (1.81)	ND (1.77)	ND (1.83)	ND (1.80)	ND (1.80)
Perfluorotridecanoic acid (PFTTrDA)		ND (1.82)	ND (1.87)	ND (1.84)	ND (1.90)	ND (1.85)	ND (1.90)	ND (1.81)	ND (1.77)	ND (1.83)	ND (1.80)	ND (1.80)
Perfluorotetradecanoic acid (PFTTA)		ND (1.82)	ND (1.87)	ND (1.84)	ND (1.90)	ND (1.85)	ND (1.90)	ND (1.81)	ND (1.77)	ND (1.83)	ND (1.80)	ND (1.80)
Total (All Compounds)		151.6	117.2	264.9	127.1	341.9	354.5	497.5	458.1	346.9	141.7	410.7
Regulated Total	20	124.7	100.2	230.1	110.3	299.5	307.1	443.8	411.1	308.3	126.8	366.0

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Containment Level
 Values reported with a (J) qualifier are estimated values. If the reported J value is greater than or equal to 1/3 the MRL and < MRL one-half the MRL is used for the concentration of that compound in the summation

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan CW-1 Standard & MMCL	MW-6		MW-7DR		MW-10A		MW-10D		MW-14		MW-18R		MW-101		MW-102		MW-102 DUP	
		6/23/2020	1/12/2021	9/22/2021	1/12/2021	9/22/2021	1/2/2020	9/21/2021	1/2/2020	9/21/2021	1/2/2020	9/21/2021	1/2/2020	9/22/2021	1/12/2021	9/21/2021	1/12/2021	9/22/2021	1/12/2021
EPA 537.1 (ng/L)																			
Perfluorobutanesulfonic acid (PFBS)		4.6	10	8.6	16	22	5.3	ND (4.1)	7.2	10	21	24	3.9	6.2	25	39	66	62	65
Perfluorohexanoic acid (PFHxA)		11	2.3	5.6	4.1	13	4.1	4.4	3.6	3.3	2.1	28	2.8	17	3.3	5	11	14	11
Perfluorooctanesulfonic acid (PFOS)		9.9	1.3	5.3	130	170	22	15	39	50	200	210	17	27	200	340	740	660	750
Perfluorohexanesulfonic acid (PFHxS)		3.2	ND (2.0)	3.5	3.6	5.6	2.1	ND (4.1)	3.3	3.7	ND (2.0)	14	2.1	4.4	3	4.2	5.1	7.2	5.1
Perfluorooctanoic acid (PFOA)		15	2.8	8.2	7.4	14	4.5	5.7	8.6	7.4	6.5	26	3.1	5.3	8.6	12	16	22	16
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	6.3	43	27	50	4	11	28	35	140	240	7	8.3	53	150	250	620	270
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (1.9)	ND (2.0)	ND (2.0)	ND (2.0)	ND (4.1)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (1.9)	ND (2.0)	ND (2.0)	ND (4.1)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (1.9)	ND (2.0)	ND (2.0)	ND (4.1)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUNA)		ND (2.0)	ND (2.0)	ND (1.9)	ND (2.0)	ND (2.0)	ND (4.1)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (1.9)	ND (2.0)	ND (2.0)	ND (4.1)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDDA)		ND (2.0)	ND (2.0)	ND (1.9)	ND (2.0)	ND (2.0)	ND (4.1)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTDA)		ND (2.0)	ND (2.0)	ND (1.9)	ND (2.0)	ND (2.0)	ND (4.1)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (1.9)	ND (2.0)	ND (2.0)	ND (2.0)	ND (4.1)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (2.0)
Hexafluoropropylene oxide dimer acid (HFPO-DA)		3.8	ND (2.0)	ND (1.9)	ND (2.0)	ND (2.0)	ND (4.1)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (1.9)	ND (2.0)	ND (2.0)
Total (All Compounds)		47.5	34.4	121.9	188.1	274.6	42.0	36.1	89.7	109.4	369.6	542.0	35.9	68.2	292.9	550.2	1088.1	1385.2	1117.1
Regulated Total	20	28.1	22.1	107.7	168.0	240	32.6	31.7	78.9	96.1	346.5	490.0	29.2	45.0	268.6	506.2	1011.1	1309.2	1041.1

NOTES:
Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
ND = Not detected above the lab reporting limits shown in parentheses.
Bolded values exceed the proposed Method 3 Standard
MMCL is Massachusetts Maximum Containment Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	9 Allen Hill Rd					
		UNKNOWN					
Well Depth (feet)							
Sampling Date		2/12/2020	7/23/2020	1/19/2021	4/27/2021	4/27/2021	11/3/2021
EPA 537.1 (ng/L)							
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	3.1
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	3.1
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	12 Allen Hill Rd			
		UNKNOWN			
Well Depth (feet)					
Sampling Date		2/14/2020	7/27/2020	1/19/2021	10/14/2021
EPA 537.1 (ng/L)					
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		2.2	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		5.8	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		4.2	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		12.2	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20	12.2	ND (2.0)	ND (2.0)	ND (2.0)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	15 Allen Hill Road				
		UNKNOWN				
Well Depth (feet)		4/28/2020	10/1/2020	1/19/2021	4/23/2021	10/14/2021
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	19 Allen Hill Road				
		UNKNOWN				
Well Depth (feet)						
Sampling Date		4/28/2020	10/1/2020	1/19/2021	4/21/2021	10/29/2021
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	20 Allen Hill Road				
		400				
Well Depth (feet)						
Sampling Date		5/8/2020	10/2/2020	1/18/2021	4/20/2021	10/19/2021
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorohexanoic acid (PFHxA)		3	ND (2.0)	2.5	ND (2.0)	ND (1.9)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluoroheptanoic acid (PFHpA)		2.3	ND (2.0)	2.5	ND (2.0)	ND (1.9)
Perfluorooctanoic acid (PFOA)		3	ND (2.0)	2.4	ND (2.0)	ND (1.9)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Total (All Compounds)		8.3	ND (2.0)	7.4	ND (2.0)	ND (1.9)
Regulated Total	20	5.3	ND (2.0)	4.9	ND (2.0)	ND (1.9)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	32 Allen Hill Rd				
		UNKNOWN				
Well Depth (feet)						
Sampling Date		2/2/2020	7/22/2020	1/22/2021	4/20/2021	11/4/2021
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	33 Allen Hill Rd				
		UNKNOWN				
Well Depth (feet)						
Sampling Date		10/30/2020	12/16/2020	4/20/2021	10/18/2021	
			DUPLICATE			
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.8
Perfluorooctanesulfonic acid (PFOS)		47	8	2.3	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		47	8	2.3	ND (2.0)	2.8
Regulated Total	20	47	8	2.3	ND (2.0)	2.8

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	7 Boylston Ave																	
		1/27/2020			3/1/2020			NOT RECORDED 3/17/2020			14,911 5/1/2020			23,425 6/18/2020			32,192 7/29/2020		
		DUPLICATE	FIELD BLANK	POET INSTALLED	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF			
EPA 537.1 (ng/L)																			
Perfluorobutanesulfonic acid (PFBS)		3.6	3.7	ND (2.0)	4.1	ND (2.0)	ND (2.0)	2.2	ND (2.0)	ND (2.0)	4.3	ND (2.0)	ND (2.0)	4.1	ND (2.0)	ND (2.0)			
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)			
Perfluorohexanesulfonic acid (PFHxS)		16	17	ND (2.0)	20	ND (2.0)	ND (2.0)	12	ND (2.0)	ND (2.0)	22	ND (2.0)	ND (2.0)	23	ND (2.0)	ND (2.0)			
Perfluorheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)			
Perfluorooctanoic acid (PFOA)		2.7	ND (2.0)	14	2.8	ND (2.0)	ND (2.0)	2.5	ND (2.0)	ND (2.0)	2.7	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)			
Perfluorooctanesulfonic acid (PFOS)		4.5	6.2	4.7	6.2	ND (2.0)	ND (2.0)	3.3	ND (2.0)	ND (2.0)	4.9	ND (2.0)	ND (2.0)	4.1	ND (2.0)	ND (2.0)			
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)			
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)			
N-EtFOSA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)			
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)			
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)			
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)			
Perfluorotridecanoic acid (PFTDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)			
Perfluorotetradecanoic acid (PFTDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)			
Total (All Compounds)		26.8	26.9	18.7	33.1	ND (2.0)	ND (2.0)	20.0	ND (2.0)	ND (2.0)	33.9	ND (2.0)	ND (2.0)	31.2	ND (2.0)	ND (2.0)			
Regulated Total	20	23.2	23.2	18.7	29.0	ND (2.0)	ND (2.0)	17.8	ND (2.0)	ND (2.0)	29.6	ND (2.0)	ND (2.0)	27.1	ND (2.0)	ND (2.0)			

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	7 Boylston Ave (continued)								
		30,276 11/01/2020			65,073 2/22/2021			79,651 4/20/2021		
		INF	MID	EFF	INF	MID	EFF	INF	MID	EFF
EPA 537.1 (ng/L)										
Perfluorobutanesulfonic acid (PFBS)		3.4	ND (2.0)	ND (2.0)	4.4	ND (2.0)	ND (2.0)	3.5	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		19	ND (2.0)	ND (2.0)	26	ND (2.0)	ND (2.0)	22	ND (2.0)	ND (2.0)
Perfluorheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	3.1*	2.1*	ND (2.0)	ND (2.0)	2.1*	ND (2.0)
Perfluorooctanoic acid (PFOA)		3.9	ND (2.0)	ND (2.0)	3	ND (2.0)	ND (2.0)	3.8	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		6.6	ND (2.0)	ND (2.0)	6.9	ND (2.0)	ND (2.0)	6.4	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		32.9	ND (2.0)	ND (2.0)	40.3	ND (2.0)	ND (2.0)	35.7	ND (2.0)	ND (2.0)
Regulated Total	20	29.5	ND (2.0)	ND (2.0)	35.9	ND (2.0)	ND (2.0)	32.2	ND (2.0)	ND (2.0)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level
 * PFHpA also detected in both the field blank and trip blank, therefore the reported result is considered invalid. Confirmed as laboratory contaminant. Result is not included in total.

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	12 Boylston Ave												
		4,939			9,900			13,469			24,535			
		1/10/2020	3/20/2020	5/1/2020	6/23/2020	7/31/2020	7/31/2020	11/6/2020	11/6/2020	11/6/2020	11/6/2020	11/6/2020		
	POET INSTALLED	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	
EPA 537.1 (ng/l)														
Perfluorobutanesulfonic acid (PFBS)	9.1	7.5	ND (2.0)	ND (2.0)	8.9	ND (2.0)	ND (2.0)	7.7	ND (2.0)	ND (2.0)	7.5	ND (2.0)	ND (2.0)	
Perfluorohexanoic acid (PFHxA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.1	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorohexanesulfonic acid (PFHxS)	14	14	ND (2.0)	ND (2.0)	18	ND (2.0)	ND (2.0)	17	ND (2.0)	ND (2.0)	18	ND (2.0)	ND (2.0)	
Perfluoroheptanoic acid (PFHpA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorooctanoic acid (PFOA)	5.7	5.9	ND (2.0)	ND (2.0)	6.8	ND (2.0)	ND (2.0)	4.7	ND (2.0)	ND (2.0)	6	ND (2.0)	ND (2.0)	
Perfluorooctanesulfonic acid (PFOS)	6.4	5.7	ND (2.0)	ND (2.0)	6.4	ND (2.0)	ND (2.0)	5.9	ND (2.0)	ND (2.0)	6.6	ND (2.0)	ND (2.0)	
Perfluorononanoic acid (PFNA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorodecanoic acid (PFDA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-EtFOSAA	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroundecanoic acid (PFUnA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-MeFOSAA	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorododecanoic acid (PFDoA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotridecanoic acid (PFTriDA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotetradecanoic acid (PFTTA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Total (All Compounds)	20	35.2	33.1	ND (2.0)	42.2	ND (2.0)	ND (2.0)	35.3	ND (2.0)	ND (2.0)	38.1	ND (2.0)	ND (2.0)	
Regulated Total		26.1	25.6	ND (2.0)	31.2	ND (2.0)	ND (2.0)	27.6	ND (2.0)	ND (2.0)	30.6	ND (2.0)	ND (2.0)	

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	12 Boylston Ave (Continued)					
		33,116			50,561		
		1/29/2021			7/22/2021		
	INF	MID	EFF	INF	MID	EFF	
EPA 537.1 (ng/l)							
Perfluorobutanesulfonic acid (PFBS)	8.7	ND (2.0)	ND (2.0)	9.9	ND (2.0)	ND (2.0)	
Perfluorohexanoic acid (PFHxA)	ND (2.0)	ND (2.0)	ND (2.0)	3.6	ND (2.0)	ND (2.0)	
Perfluorohexanesulfonic acid (PFHxS)	18	ND (2.0)	ND (2.0)	27	ND (2.0)	ND (2.0)	
Perfluoroheptanoic acid (PFHpA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorooctanoic acid (PFOA)	5.5	ND (2.0)	ND (2.0)	7.6	ND (2.0)	ND (2.0)	
Perfluorooctanesulfonic acid (PFOS)	6.2	ND (2.0)	ND (2.0)	8.7	ND (2.0)	ND (2.0)	
Perfluorononanoic acid (PFNA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorodecanoic acid (PFDA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-EtFOSAA	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroundecanoic acid (PFUnA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-MeFOSAA	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorododecanoic acid (PFDoA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotridecanoic acid (PFTriDA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotetradecanoic acid (PFTTA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Total (All Compounds)	20	38.4	ND (2.0)	56.8	ND (2.0)	ND (2.0)	
Regulated Total		29.7	ND (2.0)	43.3	ND (2.0)	ND (2.0)	

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	13 Boylston Ave						
		~100'						
Well Depth (feet)		1/8/2020	5/28/2020	10/7/2020	1/22/2021	4/26/2021	5/18/2021	11/11/2021
Sampling Date							Sample to confirm detection	
EPA 537.1 (ng/L)								
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.8	ND (2.0)	2.4
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.8	ND (2.0)	2.4
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.8	ND (2.0)	2.4

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	16 Boylston Ave							
		NA				0	260		
		1/9/2020	5/28/2020	10/7/2020	1/20/2021	3/23/2021	5/27/2021		
Flow Meter Reading (gallons)									
Sampling Date									
					POET INSTALLED	INF	MID	EFF	
<i>EPA 537.1 (ng/L)</i>									
Perfluorobutanesulfonic acid (PFBS)		5.3	6.2	5	6.6		5.5	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		3.7	3.9	3.3	3.6		6.2	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		4.7	5.2	6	9.4		9.4	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		2.6	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		8	8.9	8.2	8.9		11	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		7.2	5.5	4.2	5		4.6	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTriDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		28.9	29.7	26.7	33.5		39.3	ND (2.0)	ND (2.0)
Regulated Total	20	19.9	19.6	18.4	23.3		27.6	ND (2.0)	ND (2.0)

NOTES:
Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
ND = Not detected above the lab reporting limits shown in parentheses.
Bolted values exceed the proposed Method 1 Standard
MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	17 Boylston Ave					
		UNKNOWN					
Well Depth (feet)		1/8/2020	5/28/2020	10/7/2020	1/18/2021	4/27/2021	11/11/2021
Sampling Date							
EPA 537.1 (ng/L)							
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	2.1	2.3	4.7
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	2.1	2.3	4.7
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	2.1	2.3	4.7

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	21 Boylston Ave				
		UNKNOWN				
Well Depth (feet)		2/19/2020	7/22/2020	1/19/2021	4/26/2021	10/14/2021
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)

NOTES:
Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
ND = Not detected above the lab reporting limits shown in parentheses.
Bolded values exceed the proposed Method 1 Standard
MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	24 Boylston Ave					
		~200'					
		1/9/2020	5/29/2020	10/2/2020	1/19/2021	4/27/2021	10/18/2021
Well Depth (feet)							
Sampling Date							
EPA 537.1 (ng/L)							
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	30 Boylston Ave		
		UNKOWN		
Well Depth (feet)				
Sampling Date		5/6/2021	10/14/2021	11/3/2021
EPA 537.1 (ng/L)				
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (1.9)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (1.9)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (1.9)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (1.9)
Perfluorooctanoic acid (PFOA)		2.1	2.7	2.8
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	3.1	3.2
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (1.9)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (1.9)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (1.9)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (1.9)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (1.9)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (1.9)
Total (All Compounds)		2.1	5.8	6.0
Regulated Total	20	2.1	5.8	6.0

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	32 Boylston Ave				
		UNKOWN				
Well Depth (feet)		5/28/2020	10/7/2020	1/21/2021	4/27/2021	11/3/2021
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorooctanoic acid (PFOA)		3.7	3.3	ND (2.0)	ND (2.0)	2.5
Perfluorooctanesulfonic acid (PFOS)		2.9	2.3	ND (2.0)	ND (2.0)	2.2
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Total (All Compounds)		6.6	5.6	ND (2.0)	ND (2.0)	4.7
Regulated Total	20	6.6	5.6	ND (2.0)	ND (2.0)	4.7

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	38 Boylston Ave
Well Depth (feet)		UNKNOWN
Sampling Date		8/31/2021
EPA 537.1 (ng/L)		
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)
Perfluorooctanoic acid (PFOA)		4.7
Perfluorooctanesulfonic acid (PFOS)		3.8
Perfluorononanoic acid (PFNA)		ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)
N-EtFOSAA		ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)
N-MeFOSAA		ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)
Total (All Compounds)		8.5
Regulated Total	20	8.5

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	40 Boylston Ave				
		UNKNOWN				
Well Depth (feet)						
Sampling Date		4/28/2020	10/1/2020	1/20/2021	4/20/2021	10/14/2021
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	2.1	ND (2.0)
Perfluorooctanoic acid (PFOA)		5.3	4.6	6	7.5	6.5
Perfluorooctanesulfonic acid (PFOS)		3.9	3.8	4.3	5.3	5.6
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		9.2	8.4	10.3	14.9	12.1
Regulated Total	20	9.2	8.4	10.3	14.9	12.1

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	29 Brooks Station
Well Depth (feet)		UNKNOWN
Sampling Date		7/29/2021
EPA 537.1 (ng/L)		
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)
N-EtFOSAA		ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)
N-MeFOSAA		ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)
Total (All Compounds)		ND (2.0)
Regulated Total	20	ND (2.0)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	6 Connor Lane			
		UNKNOWN			
Well Depth (feet)					
Sampling Date		8/31/2020	1/21/2021	4/20/2021	10/14/2021
EPA 537.1 (ng/L)					
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	3.3	2.9	5
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	2.3	2.9	3.7
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	5.6	5.8	8.7
Regulated Total	20	ND (2.0)	2.3	2.9	3.7

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	18 Connor
Well Depth (feet)		UNKNOWN
Sampling Date		9/23/2021
EPA 537.1 (ng/L)		
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)
N-EtFOSAA		ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)
N-MeFOSAA		ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)
Total (All Compounds)		ND (2.0)
Regulated Total	20	ND (2.0)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	4 Goodnow Road				
		UNKNOWN				
Well Depth (feet)		4/28/2020	10/1/2020	1/21/2021	4/20/2021	10/14/2021
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	11 Gregory Hill Rd						
		UNKNOWN						
		1/22/2020	5/29/2020	10/1/2020	1/19/2021	4/21/2021	10/14/2021	11/11/2021
Well Depth (feet)								
Sampling Date								sample to confirm detection
EPA 537.1 (ng/L)								
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	1.9	2.5
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	1.9	2.5
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	1.9	2.5

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	13 Gregory Hill Road						
		UNKNOWN						
		1/22/2020	5/29/2020		10/1/2020	1/19/2021	4/21/2021	10/14/2021
				DUPLICATE				
EPA 537.1 (ng/L)								
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	1.9
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.2
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	4.1
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	4.1

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
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TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	14 Gregory Hill Rd					
		UNKNOWN					
Well Depth (feet)		1/9/2020	5/29/2020	10/1/2020	1/20/2021	4/20/2021	10/14/2021
Sampling Date							
EPA 537.1 (ng/L)							
Perfluorobutanesulfonic acid (PFBS)		2.6	2.9	3.6	2.7	3.9	3.7
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	2.7	2.7	2.2	3.4
Perfluorohexanesulfonic acid (PFHxS)		3.7	5.2	11	4.4	7.6	14
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		3.2	3.4	3.6	2.2	3.4	6
Perfluorooctanesulfonic acid (PFOS)		2.5	2.7	3.7	ND (2.0)	2.7	4.8
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		12	14.2	21.9	9.3	17.6	31.9
Regulated Total	20	9.4	11.3	18.3	6.6	13.7	24.8

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
 PFAS Drinking Water Summary
 Princeton, Massachusetts
 RTN 2-21072

Flow Meter Reading (gallons) Sampling Date	Massachusetts Contingency Plan GW-1 Standard & MMCL	15 Gregory Hill Rd													
		-		5,368			68,471			104,009			189,140		
		1/13/2020	2/26/2020	3/11/2020			6/23/2020			7/31/2020			11/3/2020		
		POET INSTALLED	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	
EPA 537.1 (ng/L)															
Perfluorobutanesulfonic acid (PFBS)		2.7	3.6	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	5.1	ND (2.0)	ND (2.0)	
Perfluorohexanoic acid (PFHxA)		2.9	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorohexanesulfonic acid (PFHxS)		5.2	6.6	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	12	ND (2.0)	ND (2.0)	
Perfluoroheptanoic acid (PFHpA)		4.7	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorooctanoic acid (PFOA)		5.1	2.2	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.4	ND (2.0)	ND (2.0)	
Perfluorooctanesulfonic acid (PFOS)		5.4	5.4	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	6.5	ND (2.0)	ND (2.0)	
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotridecanoic acid (PFTriDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Total (All Compounds)		26	17.8	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	26.0	ND (2.0)	ND (2.0)	
Regulated Total	20	20.4	14.2	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	20.9	ND (2.0)	ND (2.0)	

Flow Meter Reading (gallons) Sampling Date	Massachusetts Contingency Plan GW-1 Standard & MMCL	15 Gregory Hill Rd (Continued)					
		199,350			200,005		
		1/29/2021			4/21/2021		
		INF	MID	EFF	INF	MID	EFF
EPA 537.1 (ng/L)							
Perfluorobutanesulfonic acid (PFBS)		5	ND (2.0)	ND (2.0)	4.6	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		11	ND (2.0)	ND (2.0)	12	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		3.4	ND (2.0)	ND (2.0)	3.0	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		6.1	ND (2.0)	ND (2.0)	6.5	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTriDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		25.5	ND (2.0)	ND (2.0)	26.1	ND (2.0)	ND (2.0)
Regulated Total	20	20.5	ND (2.0)	ND (2.0)	21.5	ND (2.0)	ND (2.0)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	21 Gregory Hill Rd				
		UNKNOWN				
Well Depth (feet)						
Sampling Date		2/28/2020	9/18/2020	1/21/2021	4/26/2021	11/11/2021
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	44 Gregory Hill Rd				
		UNKNOWN				
Well Depth (feet)						
Sampling Date		2/5/2020	7/22/2020	1/20/2021	4/26/2021	10/19/2021
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	Gregory Spring
Well Depth (feet)		NA
Sampling Date		10/18/2021
EPA 537.1 (ng/L)		
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)
N-EtFOSAA		ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)
N-MeFOSAA		ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)
Total (All Compounds)		ND (2.0)
Regulated Total	20	ND (2.0)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	1 Hubbardston Rd														
		865			1,211			3,896			6,577					
		1/8/2020	2/26/2020	3/11/2020	5/1/2020	5/1/2020	5/1/2020	6/18/2020	6/18/2020	6/18/2020	7/29/2020	7/29/2020	7/29/2020	7/29/2020	7/29/2020	
		POET INSTALLED			INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF
EPA 537.1 (ng/L)																
Perfluorobutanesulfonic acid (PFBS)	7	5.7	ND (2.0)	ND (2.0)	ND (2.0)	6.4	ND (2.0)	ND (2.0)	6.5	ND (2.0)	ND (2.0)	6.4	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorohexanoic acid (PFHxA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorohexanesulfonic acid (PFHxS)	22	19	ND (2.0)	ND (2.0)	ND (2.0)	21	ND (2.0)	ND (2.0)	24	ND (2.0)	ND (2.0)	23	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorooheptanoic acid (PFHpA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorooctanoic acid (PFOA)	3.4	3	ND (2.0)	ND (2.0)	ND (2.0)	3.1	ND (2.0)	ND (2.0)	2.9	ND (2.0)	ND (2.0)	2.9	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorooctanesulfonic acid (PFOS)	6.1	5.6	ND (2.0)	ND (2.0)	ND (2.0)	5.7	ND (2.0)	ND (2.0)	6.2	ND (2.0)	ND (2.0)	5.6	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorononanoic acid (PFNA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorodecanoic acid (PFDA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-EtFOSAA	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroundecanoic acid (PFUnA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-MeFOSAA	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorododecanoic acid (PFDoA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotridecanoic acid (PFTrDA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotetradecanoic acid (PFTA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Total (All Compounds)	38.5	33.3	ND (2.0)	ND (2.0)	ND (2.0)	36.2	ND (2.0)	ND (2.0)	39.6	ND (2.0)	ND (2.0)	37.9	ND (2.0)	ND (2.0)	ND (2.0)	
Regulated Total	20	31.5	27.6	ND (2.0)	ND (2.0)	29.8	ND (2.0)	ND (2.0)	33.1	ND (2.0)	ND (2.0)	31.5	ND (2.0)	ND (2.0)	ND (2.0)	

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	1 Hubbardston Rd								
		13,221			14,674			15,179		
		11/13/2020			1/29/2021			4/23/2021		
		INF	MID	EFF	INF	MID	EFF	INF	MID	EFF
EPA 537.1 (ng/L)										
Perfluorobutanesulfonic acid (PFBS)	8.5	ND (2.0)	ND (2.0)	9.5	ND (2.0)	ND (2.0)	7.5	ND (2.0)	ND (2.0)	
Perfluorohexanoic acid (PFHxA)	ND (2.0)	ND (2.0)	ND (2.0)	2.1	ND (2.0)	ND (2.0)	2.1	ND (2.0)	ND (2.0)	
Perfluorohexanesulfonic acid (PFHxS)	31	ND (2.0)	ND (2.0)	37	ND (2.0)	ND (2.0)	36	ND (2.0)	ND (2.0)	
Perfluorooheptanoic acid (PFHpA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorooctanoic acid (PFOA)	3	ND (2.0)	ND (2.0)	3.7	ND (2.0)	ND (2.0)	5.3	ND (2.0)	ND (2.0)	
Perfluorooctanesulfonic acid (PFOS)	5.7	ND (2.0)	ND (2.0)	8.2	ND (2.0)	ND (2.0)	9.5	ND (2.0)	ND (2.0)	
Perfluorononanoic acid (PFNA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorodecanoic acid (PFDA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-EtFOSAA	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroundecanoic acid (PFUnA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-MeFOSAA	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorododecanoic acid (PFDoA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotridecanoic acid (PFTrDA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotetradecanoic acid (PFTA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Total (All Compounds)	48.2	ND (2.0)	ND (2.0)	60.5	ND (2.0)	ND (2.0)	60.4	ND (2.0)	ND (2.0)	
Regulated Total	20	39.7	ND (2.0)	48.9	ND (2.0)	ND (2.0)	50.8	ND (2.0)	ND (2.0)	

NOTES:
Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
ND = Not detected above the lab reporting limits shown in parentheses.
Bolded values exceed the proposed Method 1 Standard
MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
 POET System Monitoring
 Princeton, Massachusetts
 RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	5 Hubbardston Road													
		1,131			5,143			11,960			22,710				
		12/5/2019	1/28/2020	2/5/2020	3/5/2020	5/1/2020	6/30/2020								
Notes	POET INSTALLED	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF		
EPA 537.1 (ng/L)															
Perfluorobutanesulfonic acid (PFBS)		8.4		6.3	ND (2.0)	ND (2.0)	4.3	ND (2.0)	ND (2.0)	4.6	ND (2.0)	ND (2.0)	4.6	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		29		25	ND (2.0)	ND (2.0)	11	ND (2.0)	ND (2.0)	15	ND (2.0)	ND (2.0)	17	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		2.9		2.5	ND (2.0)	ND (2.0)	2.7	ND (2.0)	ND (2.0)	2.9	ND (2.0)	ND (2.0)	2.6	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		7.3		6.9	ND (2.0)	ND (2.0)	4.9	ND (2.0)	ND (2.0)	4.8	ND (2.0)	ND (2.0)	5.5	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		47.6		40.7	ND (2.0)	ND (2.0)	22.9	ND (2.0)	ND (2.0)	27.3	ND (2.0)	ND (2.0)	29.7	ND (2.0)	ND (2.0)
Regulated Total	20	39.2		34.4	ND (2.0)	ND (2.0)	18.6	ND (2.0)	ND (2.0)	22.7	ND (2.0)	ND (2.0)	25.1	ND (2.0)	ND (2.0)

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	5 Hubbardston Road											
		27,069			39,213			47,979			58,197		
		8/5/2020	11/18/2020	2/5/2021	4/27/2021								
Notes	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	
EPA 537.1 (ng/L)													
Perfluorobutanesulfonic acid (PFBS)		7	ND (2.0)	ND (2.0)	7	ND (2.0)	ND (2.0)	4.1	ND (2.0)	ND (2.0)	6.4	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		27	ND (2.0)	ND (2.0)	28	ND (2.0)	ND (2.0)	16	ND (2.0)	ND (2.0)	30	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		2.5	ND (2.0)	ND (2.0)	2.7	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	3.3	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		6.7	ND (2.0)	ND (2.0)	6.3	ND (2.0)	ND (2.0)	3.9	ND (2.0)	ND (2.0)	7.3	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		43.2	ND (2.0)	ND (2.0)	44.0	ND (2.0)	ND (2.0)	24.0	ND (2.0)	ND (2.0)	47.0	ND (2.0)	ND (2.0)
Regulated Total	20	36.2	ND (2.0)	ND (2.0)	37.0	ND (2.0)	ND (2.0)	19.9	ND (2.0)	ND (2.0)	40.6	ND (2.0)	ND (2.0)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	7 Hubbardston Rd					
		400'					
		12/5/2019	6/5/2020	10/1/2020	1/29/2021	4/21/2021	10/14/2021
Well Depth (feet)							
Sampling Date							
EPA 537.1 (ng/L)							
Perfluorobutanesulfonic acid (PFBS)		2.3	3.1	3.4	4.9	4.2	4.3
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		3.5	5.8	7.1	8.7	8.6	12
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		2.9	2.4	2.1	3.4	3.1	3.6
Perfluorooctanesulfonic acid (PFOS)		3.3	3.5	3.2	3.6	3.7	4.5
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		12	14.8	15.8	20.6	19.6	24.4
Regulated Total	20	9.7	11.7	12.4	15.7	15.4	20.1

NOTES:
Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
ND = Not detected above the lab reporting limits shown in parentheses.
Bolded values exceed the proposed Method 1 Standard
MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
 POET System Monitoring
 Princeton, Massachusetts
 RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	15 Hubbardston Road															
		-				Not Recorded			3,771			6,855			8,913		
		12/5/2019		2/11/2020		2/26/2020			5/1/2020			6/18/2020			7/30/2020		
		POET INSTALLED		INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF		
<i>EPA 537.1 (ng/L)</i>		27	17	ND (2.0)	ND (2.0)	21	ND (2.0)	ND (2.0)	21	ND (2.0)	ND (2.0)	20	ND (2.0)	ND (2.0)			
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)			
Perfluorohexanoic acid (PFHxA)		110	73	ND (2.0)	ND (2.0)	95	ND (2.0)	ND (2.0)	90	ND (2.0)	ND (2.0)	92	ND (2.0)	ND (2.0)			
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)			
Perfluoroheptanoic acid (PFHpA)		4.6	3.5	ND (2.0)	ND (2.0)	4.2	ND (2.0)	ND (2.0)	3	ND (2.0)	ND (2.0)	3.9	ND (2.0)	ND (2.0)			
Perfluorooctanoic acid (PFOA)		18	14	ND (2.0)	ND (2.0)	21	ND (2.0)	ND (2.0)	18	ND (2.0)	ND (2.0)	19	ND (2.0)	ND (2.0)			
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)			
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)			
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)			
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)			
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)			
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)			
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)			
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)			
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)			
Total (All Compounds)		159.6	107.5	ND (2.0)	ND (2.0)	141.2	ND (2.0)	ND (2.0)	132.0	ND (2.0)	ND (2.0)	134.9	ND (2.0)	ND (2.0)			
Regulated Total	20	132.6	90.5	ND (2.0)	ND (2.0)	120.2	ND (2.0)	ND (2.0)	111.0	ND (2.0)	ND (2.0)	114.9	ND (2.0)	ND (2.0)			

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	15 Hubbardston Road															
		13,958				18,399				22,074				32,037			
		11/6/2020				1/29/2021				4/26/2021				10/18/2021			
		INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF				
<i>EPA 537.1 (ng/L)</i>		21	ND (2.0)	ND (2.0)	27	ND (2.0)	ND (2.0)	16	ND (2.0)	ND (2.0)	16	ND (2.0)	ND (2.0)				
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Perfluorohexanoic acid (PFHxA)		110	ND (2.0)	ND (2.0)	120	ND (2.0)	ND (2.0)	85	ND (2.0)	ND (2.0)	120	ND (2.0)	ND (2.0)				
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Perfluoroheptanoic acid (PFHpA)		4	ND (2.0)	ND (2.0)	5	ND (2.0)	ND (2.0)	3.8	ND (2.0)	ND (2.0)	4.6	ND (2.0)	ND (2.0)				
Perfluoroheptanoic acid (PFHpA)		17	ND (2.0)	ND (2.0)	25	ND (2.0)	ND (2.0)	19	ND (2.0)	ND (2.0)	29	ND (2.0)	ND (2.0)				
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Total (All Compounds)		152.0	ND (2.0)	ND (2.0)	177.0	ND (2.0)	ND (2.0)	123.8	ND (2.0)	ND (2.0)	169.6	ND (2.0)	ND (2.0)				
Regulated Total	20	131.0	ND (2.0)	ND (2.0)	150.0	ND (2.0)	ND (2.0)	107.8	ND (2.0)	ND (2.0)	153.6	ND (2.0)	ND (2.0)				

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
 PFAS Drinking Water Summary
 Princeton, Massachusetts
 RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	19 Hubbardston Rd									
		-		-		-		-		-	
		Flow Meter Reading (gallons)	12/5/2019	2/26/2020	6/5/2020			11/21/2020	1/23/2021	4/30/2021	11/6/2021
Sampling Date		POET INSTALLED BY HOMEOWNER	EFFLUENT ONLY	INF	MID	EFF	INF	INF	INF	INF	
EPA 537.1 (ng/l)											
Perfluorobutanesulfonic acid (PFBS)		2.9	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	3.1	2.7	2.2	2.7	
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorohexanesulfonic acid (PFHxS)		9.7	ND (2.0)	5.8	ND (2.0)	ND (2.0)	13	9.3	6.7	11.0	
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Total (All Compounds)		12.6	ND (2.0)	5.8	ND (2.0)	ND (2.0)	16.1	12	8.9	13.7	
Regulated Total	20	9.7	ND (2.0)	5.8	ND (2.0)	ND (2.0)	13	9.3	6.7	11.0	

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	23 Hubbardston Rd						
		UNKNOWN						
Well Depth (feet)								
Sampling Date		1/10/2020	1/27/2020	5/29/2020	10/2/2020	1/18/2021	4/22/2021	10/14/2021
<i>EPA 537.1 (ng/L)</i>								
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		4.9	5.0	4.1	2.6	3.9	4.7	5.5
Perfluorooctanesulfonic acid (PFOS)		4.1	3.7	3.3	2.3	2.7	3.2	4.5
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		9.0	8.7	7.4	4.9	6.6	7.9	10
Regulated Total	20	9.0	8.7	7.4	4.9	6.6	7.9	10

NOTES:
Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
ND = Not detected above the lab reporting limits shown in parentheses.
Bolded values exceed the proposed Method 1 Standard
MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	33 Hubbardston Rd				
		UNKNOWN				
Well Depth (feet)						
Sampling Date		2/5/2020	7/23/2020	1/21/2021	4/26/2021	10/18/2021
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	2.1	ND (2.0)	2.1	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		2.5	2.1	ND (2.0)	2.4	2.8
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		2.5	4.2	ND (2.0)	4.5	2.8
Regulated Total	20	2.5	4.2	ND (2.0)	4.5	2.8

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	35 Hubbardston Rd		
		11/11/2020	4/26/2021	10/18/2021
Well Depth (feet)		UNKNOWN		
Sampling Date				
<i>EPA 537.1 (ng/L)</i>				
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	2.6
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	4.9
Perfluorooctanoic acid (PFOA)		7.5	8.9	17
Perfluorooctanesulfonic acid (PFOS)		8.4	8.2	16
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		15.9	17.1	40.5
Regulated Total	20	15.9	17.1	37.9

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	36 Hubbardston Rd				
		UNKNOWN				
Well Depth (feet)						
Sampling Date		2/6/2020	7/22/2020	1/21/2021	4/27/2021	10/18/2021
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	5.4	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	5.0	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	10.4	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20	ND (2.0)	10.4	ND (2.0)	ND (2.0)	ND (2.0)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
 PFAS Drinking Water Summary
 Princeton, Massachusetts
 RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	39 Hubbardston Rd										
		UNKNOWN		540			1,566			2,417		
		1/22/2021	3/12/2021	3/25/2021			5/3/2021			5/27/2021		
			POET INSTALLED	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF
<i>EPA 537.1 (ng/L)</i>												
Perfluorobutanesulfonic acid (PFBS)		3.1		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		2.4		2.2	ND (2.0)	ND (2.0)	2.1	ND (2.0)	ND (2.0)	2.1	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)		9.6	ND (2.0)	ND (2.0)	9.1	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		3.4		8.3	ND (2.0)	ND (2.0)	7.6	ND (2.0)	ND (2.0)	3.4	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		10.4		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	14	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		11		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	9.4	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTTrDA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		30.3		20.1	ND (2.0)	ND (2.0)	18.8	ND (2.0)	ND (2.0)	28.9	ND (2.0)	ND (2.0)
Regulated Total	20	24.8		17.9	ND (2.0)	ND (2.0)	16.7	ND (2.0)	ND (2.0)	26.8	ND (2.0)	ND (2.0)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	42 Hubbardston Rd													
		3,096				7,975						Not Recorded			
		2/10/2020	7/23/2020		1/19/2021	3/2/2021	3/25/2021			4/26/2021			6/3/2021		
Well Depth (feet)			DUPLICATE		POET INSTALLED	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	
Sampling Date															
EPA 537.1 (ng/L)															
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	2.1		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	4.1		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	5		3.1	ND (2.0)	ND (2.0)	2.7	ND (2.0)	ND (2.0)	2.9	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	7.8	7.2	20		14	ND (2.0)	ND (2.0)	11	ND (2.0)	ND (2.0)	12	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	7.9	8.5	12		13	ND (2.0)	ND (2.0)	9.2	ND (2.0)	ND (2.0)	10	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	15.7	15.7	44.2		32.4	ND (2.0)	ND (2.0)	22.9	ND (2.0)	ND (2.0)	27.2	ND (2.0)	ND (2.0)
Regulated Total	20	ND (2.0)	15.7	15.7	38.0		30.1	ND (2.0)	ND (2.0)	22.9	ND (2.0)	ND (2.0)	24.9	ND (2.0)	ND (2.0)

NOTES:
Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
ND = Not detected above the lab reporting limits shown in parentheses.
Bolded values exceed the proposed Method 1 Standard
MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
 PFAS Drinking Water Summary
 Princeton, Massachusetts
 RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	43 Hubbardston													
		-		2,655			4,953			7,349			11,146		
		12/12/2019	3/20/2020	5/8/2020			6/23/2020			7/31/2020			11/11/2020		
			POET INSTALLED	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF
EPA 537.1 (ng/L)															
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorohexanoic acid (PFHxA)		3.5		3.1	ND (2.0)	ND (2.0)	3.1	ND (2.0)	ND (2.0)	2.9	ND (2.0)	ND (2.0)	2.8	ND (2.0)	
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroheptanoic acid (PFHpA)		4.4		4.4	ND (2.0)	ND (2.0)	4.6	ND (2.0)	ND (2.0)	4.5	ND (2.0)	ND (2.0)	3.4	ND (2.0)	
Perfluorooctanoic acid (PFOA)		15		15	ND (2.0)	ND (2.0)	15	ND (2.0)	ND (2.0)	14	ND (2.0)	ND (2.0)	11	ND (2.0)	
Perfluorooctanesulfonic acid (PFOS)		10		10	ND (2.0)	ND (2.0)	12	ND (2.0)	ND (2.0)	9.9	ND (2.0)	ND (2.0)	9.3	ND (2.0)	
Perfluorononanoic acid (PFNA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorodecanoic acid (PFDA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-EtFOSAA		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroundecanoic acid (PFUnA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-MeFOSAA		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorododecanoic acid (PFDoA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotetradecanoic acid (PFTA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Total (All Compounds)		33		32.5	ND (2.0)	ND (2.0)	34.7	ND (2.0)	ND (2.0)	31.3	ND (2.0)	ND (2.0)	26.5	ND (2.0)	
Regulated Total	20	29		29.4	ND (2.0)	ND (2.0)	31.6	ND (2.0)	ND (2.0)	28.4	ND (2.0)	ND (2.0)	23.7	ND (2.0)	

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	43 Hubbardston					
		15,057			18,056		
		2/5/2021					
		INF	MID	EFF	INF	MID	EFF
EPA 537.1 (ng/L)							
Perfluorobutanesulfonic acid (PFBS)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorohexanoic acid (PFHxA)	3.2	ND (2.0)	ND (2.0)	3.1	ND (2.0)	ND (2.0)	
Perfluorohexanesulfonic acid (PFHxS)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroheptanoic acid (PFHpA)	5.3	ND (2.0)	ND (2.0)	5.1	ND (2.0)	ND (2.0)	
Perfluorooctanoic acid (PFOA)	15	ND (2.0)	ND (2.0)	17	ND (2.0)	ND (2.0)	
Perfluorooctanesulfonic acid (PFOS)	13	ND (2.0)	ND (2.0)	12	ND (2.0)	ND (2.0)	
Perfluorononanoic acid (PFNA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorodecanoic acid (PFDA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-EtFOSAA	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroundecanoic acid (PFUnA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-MeFOSAA	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorododecanoic acid (PFDoA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotridecanoic acid (PFTrDA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotetradecanoic acid (PFTA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Total (All Compounds)		36.5	ND (2.0)	ND (2.0)	37.2	ND (2.0)	
Regulated Total	20	33.3	ND (2.0)	ND (2.0)	34.1	ND (2.0)	

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	44 Hubbardston Rd				
		UNKNOWN				
Well Depth (feet)		2/10/2020	7/23/2020	1/19/2021	4/26/2021	10/18/2021
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (4.0)	2.2	ND (2.0)	ND (2.0)	1.8
Perfluorohexanesulfonic acid (PFHxS)		ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (4.0)	2.1	ND (2.0)	ND (2.0)	2.4
Perfluorooctanoic acid (PFOA)		ND (4.0)	7.1	3.3	2.8	9.1
Perfluorooctanesulfonic acid (PFOS)		ND (4.0)	5.6	3.3	2.7	7.9
Perfluorononanoic acid (PFNA)		ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (4.0)	17	6.6	5.5	21.2
Regulated Total	20	ND (4.0)	14.8	6.6	5.5	19.4

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	46 Hubbardston Rd				
		2/12/2020	7/23/2020	1/22/2021	4/26/2021	11/3/2021
Well Depth (feet)						
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	2.6	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	2.2	2.4	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	2.4	2.4	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		6.2	8.8	6	6.1	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		6	6.2	5.7	4.9	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		12.2	19.6	19.1	11	ND (2.0)
Regulated Total	20	12.2	17.4	14.1	11	ND (2.0)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan	48 Hubbardston Rd					
		2/12/2020	7/23/2020	1/22/2021	3/3/2021	4/19/2021	10/18/2021
Well Depth (feet)	GW-1 Standard & MMCL						
Sampling Date							
EPA 537.1 (ng/L)							
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	2.4	ND (2.0)	ND (2.0)	3.0
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.0
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	2.4	ND (2.0)	ND (2.0)	5.0
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.0

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	52 Hubbardston Rd				
		15'				
Well Depth (feet)		2/12/2020	9/18/2020	1/29/2021	4/26/2021	11/8/2021
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	68 Hubbardston Rd
Well Depth (feet)		UNKNOWN
Sampling Date		11/17/2021
EPA 537.1 (ng/L)		
Perfluorobutanesulfonic acid (PFBS)		2.6
Perfluorohexanoic acid (PFHxA)		2.2
Perfluorohexanesulfonic acid (PFHxS)		2.1
Perfluoroheptanoic acid (PFHpA)		ND (2.0)
Perfluorooctanoic acid (PFOA)		3.8
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)
N-EtFOSAA		ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)
N-MeFOSAA		ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)
Total (All Compounds)		10.7
Regulated Total	20	5.9

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	73 Hubbardston Rd			
		UNKNOWN			
		6/11/2020	10/2/2020	5/3/2021	10/19/2021
Well Depth (feet)					
Sampling Date					
EPA 537.1 (ng/L)					
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	81 Hubbardston Rd			
		500			
Well Depth (feet)					
Sampling Date		4/28/2020	10/2/2020	5/3/2021	10/19/2021
EPA 537.1 (ng/L)					
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	55 Merriam Road		
		2/5/2021	4/26/2021	11/11/2021
Well Depth (feet)		UNKNOWN		
Sampling Date				
EPA 537.1 (ng/L)				
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (1.8)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (1.8)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (1.8)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (1.8)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (1.8)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (1.8)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (1.8)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (1.8)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (1.8)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (1.8)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (1.8)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (1.8)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (1.8)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (1.8)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
 PFAS Drinking Water Summary
 Princeton, Massachusetts
 RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	57 Merriam Road									
		UNKNOWN									
		4/28/2020	4/28/2020	10/1/2020			1/21/2021			2/24/2021	
Well Depth (feet)			EFF	INF	EFF	INF	EFF	INF	EFF	INF	INF
Sampling Date											
EPA 537.1 (ng/L)											
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	-	2.3	-	3.4*	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		2.5	ND (2.0)	ND (2.0)	-	6.7	-	5.1	ND (2.0)	4.6	5.5
Perfluorooctanesulfonic acid (PFOS)		4.3	ND (2.0)	ND (2.0)	-	8.7	-	7.2	ND (2.0)	6.6	8.5
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		6.8	ND (2.0)	ND (2.0)	-	17.7	-	12.3	ND (2.0)	11.2	14.0
Regulated Total	20	6.8	ND (2.0)	ND (2.0)	-	17.7	-	12.3	ND (2.0)	11.2	14.0

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

* PFHpA also detected in both the field blank and trip blank, therefore the reported result is considered invalid. Confirmed as laboratory contaminate. Result is not included in total. Reference lab reports 21B0096_2 and 21B0997_2

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	58 Merriam Rd	
		UNKNOWN	
Well Depth (feet)		10/6/2020	1/21/2021
Sampling Date			
EPA 537.1 (ng/L)			
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)
Regulated Total	20	ND (2.0)	ND (2.0)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	59 Merriam Rd			
		UNKNOWN			
Well Depth (feet)		4/28/2020	10/1/2020	4/26/2021	10/19/2021
Sampling Date					
EPA 537.1 (ng/L)					
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	70 Merriam Rd				
		167				
Well Depth (feet)		4/28/2020	10/8/2020	1/22/2021	4/30/2021	11/4/2021
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	85 Merriam Rd				
		UNKNOWN				
Well Depth (feet)						
Sampling Date		2/26/2020	7/22/2020	1/21/2021	4/19/2021	10/19/2021
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.1
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	2	2	2.4
Perfluorooctanoic acid (PFOA)		4.1	5.1	4.8	5.9	7.3
Perfluorooctanesulfonic acid (PFOS)		2.7	2.9	3	3.2	5.1
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		6.8	8.0	9.8	11.1	16.9
Regulated Total	20	6.8	8.0	9.8	11.1	14.8

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	105 Merriam Rd				
		UNKNOWN				
Well Depth (feet)		2/28/2020	7/21/2020	1/20/2021	4/26/2021	10/18/2021
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	2 Mountain Rd					
		UNKNOWN					
		1/7/2020	6/5/2020	10/7/2020	1/22/2021	4/26/2021	10/18/2021
Well Depth (feet)							
Sampling Date							
EPA 537.1 (ng/L)							
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	2	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	2.1	ND (2.0)	3.2	3.8	3.2
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	2.1	ND (2.0)	5.2	3.8	5.2
Regulated Total	20	ND (2.0)	2.1	ND (2.0)	3.2	3.8	5.2

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
 POET System Monitoring
 Princeton, Massachusetts
 RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	6 Mountain Road														
		1,557			Not Recorded			20,718			25,830					
		12/5/2019	1/28/2020	2/5/2020	3/5/2020	3/5/2020	5/8/2020	5/8/2020	6/23/2020							
Flow Meter Reading (gallons)		-	-	1,557	Not Recorded			20,718			25,830					
Sampling Date																
Notes		POET INSTALLED	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF		
EPA 537.1 (ng/L)																
Perfluorobutanesulfonic acid (PFBS)		8.4	3.7	ND (2.0)	ND (2.0)	5.8	ND (2.0)	ND (2.0)	4.3	ND (2.0)	ND (2.0)	4.1	ND (2.0)	ND (2.0)		
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.5	ND (2.0)	ND (2.0)		
Perfluorohexanesulfonic acid (PFHxS)		23	12	ND (2.0)	ND (2.0)	17	ND (2.0)	ND (2.0)	14	ND (2.0)	ND (2.0)	16	ND (2.0)	ND (2.0)		
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluorooctanoic acid (PFOA)		2.4	2.1	ND (2.0)	ND (2.0)	2.5	ND (2.0)	ND (2.0)	2.5	ND (2.0)	ND (2.0)	8.2	ND (2.0)	ND (2.0)		
Perfluorooctanesulfonic acid (PFOS)		4.7	4.1	ND (2.0)	ND (2.0)	5	ND (2.0)	ND (2.0)	4	ND (2.0)	ND (2.0)	11	ND (2.0)	ND (2.0)		
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	3.2	ND (2.0)	ND (2.0)		
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluorotridecanoic acid (PFTDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Total (All Compounds)		38.5	21.9	ND (2.0)	ND (2.0)	30.3	ND (2.0)	ND (2.0)	24.8	ND (2.0)	ND (2.0)	45.0	ND (2.0)	ND (2.0)		
Regulated Total	20	30.1	18.2	ND (2.0)	ND (2.0)	24.5	ND (2.0)	ND (2.0)	20.5	ND (2.0)	ND (2.0)	38.4	ND (2.0)	ND (2.0)		

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	6 Mountain Road											
		31,079			Not Recorded			71,731			84,195		
		INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF
Flow Meter Reading (gallons)		31,079			Not Recorded			71,731			84,195		
Sampling Date		7/29/2020			11/6/2020			2/5/2021			4/19/2021		
Notes		INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF
EPA 537.1 (ng/L)													
Perfluorobutanesulfonic acid (PFBS)		3.7	ND (2.0)	ND (2.0)	5.5	ND (2.0)	ND (2.0)	6.6	ND (2.0)	ND (2.0)	6.4	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		13	ND (2.0)	ND (2.0)	21	ND (2.0)	ND (2.0)	28	ND (2.0)	ND (2.0)	29	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	2.2	ND (2.0)	ND (2.0)	2.7	ND (2.0)	ND (2.0)	2.6	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		3.5	ND (2.0)	ND (2.0)	5.1	ND (2.0)	ND (2.0)	5.7	ND (2.0)	ND (2.0)	5.8	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		20.2	ND (2.0)	ND (2.0)	33.8	ND (2.0)	ND (2.0)	43.0	ND (2.0)	ND (2.0)	43.8	ND (2.0)	ND (2.0)
Regulated Total	20	16.5	ND (2.0)	ND (2.0)	28.3	ND (2.0)	ND (2.0)	36.4	ND (2.0)	ND (2.0)	37.4	ND (2.0)	ND (2.0)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	10 Mountain Rd						
		UNKNOWN						
		12/5/2019	6/11/2020	10/7/2020	1/21/2021	2/15/2021	4/19/2021	10/19/2021
Well Depth (feet)								
Sampling Date								
		RAW	RAW	RAW	RAW	TREATED	RAW	RAW
EPA 537.1 (ng/L)								
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	2.5	ND (2.0)	2.2	ND (2.0)	2.6	2.3
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	4.5	3.2	3.8	ND (2.0)	5.5	7.8
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	3.4	ND (2.0)	2.3	ND (2.0)	2.7	2.8
Perfluorooctanesulfonic acid (PFOS)		2.0	3.0	ND (2.0)	2.1	ND (2.0)	3.3	3.0
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		2.0	13.4	3.2	10.4	ND (2.0)	14.1	15.9
Regulated Total	20	2.0	10.9	3.2	8.2	ND (2.0)	11.5	13.6

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	14 Mountain Rd						
		500'						
Well Depth (feet)		1/9/2020	1/22/2020	5/29/2020	11/11/2020	1/22/2021	4/20/2021	10/19/2021
Sampling Date								
EPA 537.1 (ng/L)								
Perfluorobutanesulfonic acid (PFBS)		7.4	8.7	7.8	7.7	10	8.5	7.9
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		30	35	33	34	46	42	58
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		2.6	2.3	3.3	2.5	3.6	3.3	3.1
Perfluorooctanesulfonic acid (PFOS)		6.1	7.8	7	5.1	9.3	8	11.0
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		46.1	53.8	51.1	49.3	68.9	61.8	80.0
Regulated Total	20	38.7	45.1	43.3	41.6	58.9	53.3	72.1

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
 POET System Monitoring
 Princeton, Massachusetts
 RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	18 Mountain Road												
		229			1,237			5,737			11,780			
		1/10/2020	2/11/2020	2/14/2020	3/11/2020	5/1/2020	6/18/2020							
Flow Meter Reading (gallons)		229			1,237			5,737			11,780			
Sampling Date		1/10/2020	2/11/2020	2/14/2020	3/11/2020	5/1/2020	6/18/2020							
Notes		POET INSTALLED												
EPA 537.1 (ng/L)			INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF
Perfluorobutanesulfonic acid (PFBS)		25	20	ND (2.0)	ND (2.0)	27	ND (2.0)	ND (2.0)	15	ND (2.0)	ND (2.0)	7.9	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		3.4	2.8	ND (2.0)	ND (2.0)	3.1	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		150	110	ND (2.0)	ND (2.0)	160	ND (2.0)	ND (2.0)	88	ND (2.0)	ND (2.0)	44	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		6.4	5.6	ND (2.0)	ND (2.0)	6.4	ND (2.0)	ND (2.0)	4.9	ND (2.0)	ND (2.0)	3.1	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		61.0	50	ND (2.0)	ND (2.0)	61	ND (2.0)	ND (2.0)	36	ND (2.0)	ND (2.0)	24	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		245.8	188.4	ND (2.0)	ND (2.0)	257.5	ND (2.0)	ND (2.0)	143.9	ND (2.0)	ND (2.0)	79.0	ND (2.0)	ND (2.0)
Regulated Total	20	217.4	165.6	ND (2.0)	ND (2.0)	227.4	ND (2.0)	ND (2.0)	128.9	ND (2.0)	ND (2.0)	71.1	ND (2.0)	ND (2.0)

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	18 Mountain Rd											
		20,025			27,827			34,958			39,421		
		7/29/2020	11/3/2020	1/29/2021	4/20/2021								
Flow Meter Reading (gallons)		20,025			27,827			34,958			39,421		
Sampling Date		7/29/2020	11/3/2020	1/29/2021	4/20/2021								
Notes		INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF
EPA 537.1 (ng/L)													
Perfluorobutanesulfonic acid (PFBS)		6.8	ND (2.0)	ND (2.0)	4.8	ND (2.0)	ND (2.0)	10	ND (2.0)	ND (2.0)	24	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.2	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		42	ND (2.0)	ND (2.0)	28	ND (2.0)	ND (2.0)	55	ND (2.0)	ND (2.0)	160	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		2.4	ND (2.0)	ND (2.0)	2.6	ND (2.0)	ND (2.0)	4.1	ND (2.0)	ND (2.0)	6.3	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		21	ND (2.0)	ND (2.0)	16	ND (2.0)	ND (2.0)	32	ND (2.0)	ND (2.0)	58	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		72.2	ND (2.0)	ND (2.0)	51.4	ND (2.0)	ND (2.0)	101.1	ND (2.0)	ND (2.0)	250.5	ND (2.0)	ND (2.0)
Regulated Total	20	65.4	ND (2.0)	ND (2.0)	46.6	ND (2.0)	ND (2.0)	91.1	ND (2.0)	ND (2.0)	224.3	ND (2.0)	ND (2.0)

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	18 Mountain Rd		
		10/19/2021		
		INF	MID	EFF
EPA 537.1 (ng/L)				
Perfluorobutanesulfonic acid (PFBS)		24	ND (1.9)	ND (1.9)
Perfluorohexanoic acid (PFHxA)		3.8	ND (1.9)	ND (1.9)
Perfluorohexanesulfonic acid (PFHxS)		180	ND (1.9)	ND (1.9)
Perfluoroheptanoic acid (PFHpA)		ND (1.9)	ND (1.9)	ND (1.9)
Perfluorooctanoic acid (PFOA)		8.1	ND (1.9)	ND (1.9)
Perfluorooctanesulfonic acid (PFOS)		84	ND (1.9)	ND (1.9)
Perfluorononanoic acid (PFNA)		ND (1.9)	ND (1.9)	ND (1.9)
Perfluorodecanoic acid (PFDA)		ND (1.9)	ND (1.9)	ND (1.9)
N-EtFOSAA		ND (1.9)	ND (1.9)	ND (1.9)
Perfluoroundecanoic acid (PFUnA)		ND (1.9)	ND (1.9)	ND (1.9)
N-MeFOSAA		ND (1.9)	ND (1.9)	ND (1.9)
Perfluorododecanoic acid (PFDoA)		ND (1.9)	ND (1.9)	ND (1.9)
Perfluorotridecanoic acid (PFTDA)		ND (1.9)	ND (1.9)	ND (1.9)
Perfluorotetradecanoic acid (PFTA)		ND (1.9)	ND (1.9)	ND (1.9)
Total (All Compounds)		299.9	ND (1.9)	ND (1.9)
Regulated Total	20	272.1	ND (1.9)	ND (1.9)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
POET System Monitoring
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	19 Mountain Rd														
		NA			400			6,533			12,367					
		12/4/2019	1/10/2020	1/10/2020	1/17/2020	1/17/2020	1/17/2020	1/31/2020	1/31/2020	1/31/2020	1/31/2020	1/31/2020	1/31/2020	1/31/2020	1/31/2020	
Notes	POET INSTALLED			INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	
EPA 537.1 (ng/L)																
Perfluorobutanesulfonic acid (PFBS)		32		9.2	ND (2.0)	ND (2.0)	28	ND (2.0)	ND (2.0)	6.3	ND (2.0)	ND (2.0)	7.1	ND (2.0)	ND (2.0)	
Perfluorohexanoic acid (PFHxA)		5.1		ND (2.0)	ND (2.0)	ND (2.0)	4.4	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorohexanesulfonic acid (PFHxS)		220		58	ND (2.0)	ND (2.0)	190	ND (2.0)	ND (2.0)	38	ND (2.0)	ND (2.0)	39	ND (2.0)	ND (2.0)	
Perfluoroheptanoic acid (PFHpA)		2.5		ND (2.0)	ND (2.0)	ND (2.0)	2.3	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorooctanoic acid (PFOA)		11		3.5	ND (2.0)	ND (2.0)	9.9	ND (2.0)	ND (2.0)	3	ND (2.0)	ND (2.0)	3.1	ND (2.0)	ND (2.0)	
Perfluorooctanesulfonic acid (PFOS)		190		48	ND (2.0)	ND (2.0)	140	ND (2.0)	ND (2.0)	32	ND (2.0)	ND (2.0)	28	ND (2.0)	ND (2.0)	
Perfluorononanoic acid (PFNA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorodecanoic acid (PFDA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-EtFOSAA		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroundecanoic acid (PFUnA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-MeFOSAA		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorododecanoic acid (PFDoA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotridecanoic acid (PFTDA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotetradecanoic acid (PFTA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Total (All Compounds)		460.6		118.7	ND (2.0)	ND (2.0)	373.6	ND (2.0)	ND (2.0)	79.3	ND (2.0)	ND (2.0)	77.2	ND (2.0)	ND (2.0)	
Regulated Total	20	421		109.5	ND (2.0)	ND (2.0)	341.2	ND (2.0)	ND (2.0)	73	ND (2.0)	ND (2.0)	70.1	ND (2.0)	ND (2.0)	

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	19 Mountain Rd														
		25,926			32,780			40,864			58,721			77,051		
		5/8/2020	5/8/2020	6/18/2020	6/18/2020	6/18/2020	7/29/2020	7/29/2020	7/29/2020	11/3/2020	11/3/2020	11/3/2020	1/29/2021	1/29/2021	1/29/2021	
Notes	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	
EPA 537.1 (ng/L)																
Perfluorobutanesulfonic acid (PFBS)		11	ND (2.0)	ND (2.0)	42	ND (2.0)	ND (2.0)	12	ND (2.0)	ND (2.0)	28	ND (2.0)	ND (2.0)	13	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		2.6	ND (2.0)	ND (2.0)	8	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	5.5	ND (2.0)	ND (2.0)	3.3	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		71	ND (2.0)	ND (2.0)	350	ND (2.0)	ND (2.0)	80	ND (2.0)	ND (2.0)	210	ND (2.0)	ND (2.0)	81	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	3.7	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.5	ND (2.0)	ND (2.0)	2.1	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		4.2	ND (2.0)	ND (2.0)	12	ND (2.0)	ND (2.0)	4	ND (2.0)	ND (2.0)	9.9	ND (2.0)	ND (2.0)	6.2	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		44	ND (2.0)	ND (2.0)	230	ND (2.0)	ND (2.0)	55	ND (2.0)	ND (2.0)	150	ND (2.0)	ND (2.0)	71	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		132.8	ND (2.0)	ND (2.0)	645.7	ND (2.0)	ND (2.0)	151.0	ND (2.0)	ND (2.0)	405.9	ND (2.0)	ND (2.0)	176.6	ND (2.0)	ND (2.0)
Regulated Total	20	119.2	ND (2.0)	ND (2.0)	595.7	ND (2.0)	ND (2.0)	139.0	ND (2.0)	ND (2.0)	372.4	ND (2.0)	ND (2.0)	160.3	ND (2.0)	ND (2.0)

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	19 Mountain Rd					
		92,089			134,104		
		4/22/2021			11/3/2021		
Notes	INF	MID	EFF	INF	MID	EFF	
EPA 537.1 (ng/L)							
Perfluorobutanesulfonic acid (PFBS)		21	ND (2.0)	ND (2.0)	12	ND (1.9)	ND (1.8)
Perfluorohexanoic acid (PFHxA)		6.1	ND (2.0)	ND (2.0)	2.8	ND (1.9)	ND (1.8)
Perfluorohexanesulfonic acid (PFHxS)		170	ND (2.0)	ND (2.0)	96	ND (1.9)	ND (1.8)
Perfluoroheptanoic acid (PFHpA)		2.3	ND (2.0)	ND (2.0)	ND (1.8)	ND (1.9)	ND (1.8)
Perfluorooctanoic acid (PFOA)		9.2	ND (2.0)	ND (2.0)	6.8	ND (1.9)	ND (1.8)
Perfluorooctanesulfonic acid (PFOS)		130	ND (2.0)	ND (2.0)	110	ND (1.9)	ND (1.8)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)	ND (1.9)	ND (1.8)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)	ND (1.9)	ND (1.8)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)	ND (1.9)	ND (1.8)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)	ND (1.9)	ND (1.8)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)	ND (1.9)	ND (1.8)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)	ND (1.9)	ND (1.8)
Perfluorotridecanoic acid (PFTDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)	ND (1.9)	ND (1.8)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)	ND (1.9)	ND (1.8)
Total (All Compounds)		338.6	ND (2.0)	ND (2.0)	227.6	ND (1.9)	ND (1.8)
Regulated Total	20	311.5	ND (2.0)	ND (2.0)	212.8	ND (1.9)	ND (1.8)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
 POET System Monitoring
 Princeton, Massachusetts
 RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	20 Mountain Road													
		295			-			13,640			16,740				
		1/10/2020	2/11/2020	2/14/2020	3/17/2020	3/17/2020	3/17/2020	6/18/2020	6/18/2020	6/18/2020	7/29/2020	7/29/2020	7/29/2020		
Notes		POET INSTALLED	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	
EPA 537.1 (ng/L)															
Perfluorobutanesulfonic acid (PFBS)		12		14	ND (2.0)	ND (2.0)	15	ND (2.0)	ND (2.0)	19	ND (2.0)	ND (2.0)	18	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)		2.1	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.7	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		60		74	ND (2.0)	ND (2.0)	78	ND (2.0)	ND (2.0)	120	ND (2.0)	ND (2.0)	110	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		3.5		4.1	ND (2.0)	ND (2.0)	4.2	ND (2.0)	ND (2.0)	5.2	ND (2.0)	ND (2.0)	4.3	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		22		28	ND (2.0)	ND (2.0)	30	ND (2.0)	ND (2.0)	44	ND (2.0)	ND (2.0)	44	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		97.5		122.2	ND (2.0)	ND (2.0)	127.2	ND (2.0)	ND (2.0)	190.9	ND (2.0)	ND (2.0)	176.3	ND (2.0)	ND (2.0)
Regulated Total	20	86		106.1	ND (2.0)	ND (2.0)	112.2	ND (2.0)	ND (2.0)	169.2	ND (2.0)	ND (2.0)	158.3	ND (2.0)	ND (2.0)

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	20 Mountain Road								
		25,895			31,955			39,074		
		11/18/2020	11/18/2020	11/18/2020	1/29/2021	1/29/2021	1/29/2021	4/26/2021	4/26/2021	4/26/2021
Notes	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	
EPA 537.1 (ng/L)										
Perfluorobutanesulfonic acid (PFBS)		18	ND (2.0)	ND (2.0)	22	ND (2.0)	ND (2.0)	17	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		2.9	ND (2.0)	ND (2.0)	3.1	ND (2.0)	ND (2.0)	3.1	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		110	ND (2.0)	ND (2.0)	130	ND (2.0)	ND (2.0)	97	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		6.1	ND (2.0)	ND (2.0)	6.4	ND (2.0)	ND (2.0)	4.9	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		43	ND (2.0)	ND (2.0)	51	ND (2.0)	ND (2.0)	38	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		180.0	ND (2.0)	ND (2.0)	212.5	ND (2.0)	ND (2.0)	160.0	ND (2.0)	ND (2.0)
Regulated Total	20	159.1	ND (2.0)	ND (2.0)	187.4	ND (2.0)	ND (2.0)	139.9	ND (2.0)	ND (2.0)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard

TABLE 1
 POET System Monitoring
 Princeton, Massachusetts
 RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	21 Mountain Rd														
		NA			161			3,726			5,410			14,256		
		12/5/2020	1/21/2020	1/24/2020	1/31/2020			2/7/2020			3/17/2020					
Notes		POET INSTALLED	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF		
EPA 537.1 (ng/L)																
Perfluorobutanesulfonic acid (PFBS)		8.2		7.5	ND (2.0)	ND (2.0)	5.5	ND (2.0)	ND (2.0)	4.3	ND (2.0)	ND (2.0)	7.4	ND (2.0)	ND (2.0)	
Perfluorohexanoic acid (PFHxA)		2.4		2.0	ND (2.0)	ND (2.0)	2.2	ND (2.0)	ND (2.0)	3.2	ND (2.0)	ND (2.0)	3	ND (2.0)	ND (2.0)	
Perfluorooctanesulfonic acid (PFHxS)		53		47	ND (2.0)	ND (2.0)	37	ND (2.0)	ND (2.0)	28	ND (2.0)	ND (2.0)	46	ND (2.0)	ND (2.0)	
Perfluorooheptanoic acid (PFHpA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.1	ND (2.0)	ND (2.0)	3.2	ND (2.0)	ND (2.0)	
Perfluorooctanoic acid (PFOA)		5.4		4.6	ND (2.0)	ND (2.0)	5.7	ND (2.0)	ND (2.0)	5.4	ND (2.0)	ND (2.0)	4.7	ND (2.0)	ND (2.0)	
Perfluorooctanesulfonic acid (PFOS)		44		37	ND (2.0)	ND (2.0)	35	ND (2.0)	ND (2.0)	26	ND (2.0)	ND (2.0)	35	ND (2.0)	ND (2.0)	
Perfluorononanoic acid (PFNA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorodecanoic acid (PFDA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-EFOSAA		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroundecanoic acid (PFUnA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-MeFOSAA		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorododecanoic acid (PFDoA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotridecanoic acid (PFTriDA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotetradecanoic acid (PFTA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Total (All Compounds)		113		98.1	ND (2.0)	ND (2.0)	85.4	ND (2.0)	ND (2.0)	69.0	ND (2.0)	ND (2.0)	99.3	ND (2.0)	ND (2.0)	
Regulated Total	20	102.4		88.6	ND (2.0)	ND (2.0)	77.7	ND (2.0)	ND (2.0)	61.5	ND (2.0)	ND (2.0)	88.9	ND (2.0)	ND (2.0)	

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	21 Mountain Rd														
		28,173			63,830			78,724			112,079			135,525		
		5/8/2020	6/30/2020	7/31/2020	11/6/2020			2/5/2021								
Notes	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	
EPA 537.1 (ng/L)																
Perfluorobutanesulfonic acid (PFBS)		4	ND (2.0)	ND (2.0)	4.5	ND (2.0)	ND (2.0)	5.6	ND (2.0)	ND (2.0)	3.1	ND (2.0)	ND (2.0)	4.6	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		2.4	ND (2.0)	ND (2.0)	2.2	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.7	ND (2.0)	ND (2.0)	
Perfluorooctanesulfonic acid (PFHxS)		25	ND (2.0)	ND (2.0)	29	ND (2.0)	ND (2.0)	37	ND (2.0)	ND (2.0)	19	ND (2.0)	ND (2.0)	27	ND (2.0)	
Perfluorooheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2	ND (2.0)	ND (2.0)	
Perfluorooctanoic acid (PFOA)		5.4	ND (2.0)	ND (2.0)	5.0	ND (2.0)	ND (2.0)	4.5	ND (2.0)	ND (2.0)	4.1	ND (2.0)	5.4	ND (2.0)	ND (2.0)	
Perfluorooctanesulfonic acid (PFOS)		21	ND (2.0)	ND (2.0)	24	ND (2.0)	ND (2.0)	25	ND (2.0)	ND (2.0)	16	ND (2.0)	21	ND (2.0)	ND (2.0)	
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-EFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotridecanoic acid (PFTriDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Total (All Compounds)		57.8	ND (2.0)	ND (2.0)	64.7	ND (2.0)	ND (2.0)	72.1	ND (2.0)	ND (2.0)	42.2	ND (2.0)	62.7	ND (2.0)	ND (2.0)	
Regulated Total	20	51.4	ND (2.0)	ND (2.0)	58	ND (2.0)	ND (2.0)	66.5	ND (2.0)	ND (2.0)	39.1	ND (2.0)	55.4	ND (2.0)	ND (2.0)	

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	21 Mountain Rd		
		156,974		
		4/19/2021		
Notes	INF	MID	EFF	
EPA 537.1 (ng/L)				
Perfluorobutanesulfonic acid (PFBS)		3.2	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFHxS)		23	ND (2.0)	ND (2.0)
Perfluorooheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		4.5	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		18	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)
N-EFOSAA		ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTriDA)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		48.7	ND (2.0)	ND (2.0)
Regulated Total	20	45.5	ND (2.0)	ND (2.0)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Tota
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
 PFAS Drinking Water Summary
 Princeton, Massachusetts
 RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	22 Mountain Rd												
		544			1,009			1,131			1,156			
		7/31/2020	9/3/2020	9/10/2020	11/18/2020	2/5/2021	4/19/2021							
Flow Meter Reading (gallons)	POET INSTALLED	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	
<i>EPA 537.1 (ng/L)</i>														
Perfluorobutanesulfonic acid (PFBS)	86	85	ND (2.0)	ND (2.0)	29	ND (2.0)	ND (2.0)	85	ND (2.0)	ND (2.0)	85	ND (2.0)	ND (2.0)	
Perfluorohexanoic acid (PFHxA)	8.7	15	ND (2.0)	ND (2.0)	4.1	ND (2.0)	ND (2.0)	15	ND (2.0)	ND (2.0)	13	ND (2.0)	ND (2.0)	
Perfluorohexanesulfonic acid (PFHxS)	490	570	ND (2.0)	ND (2.0)	160	ND (2.0)	ND (2.0)	570	ND (2.0)	ND (2.0)	530	ND (2.0)	ND (2.0)	
Perfluoroheptanoic acid (PFHpA)	3.7	5.8	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	5.8	ND (2.0)	ND (2.0)	5.6	ND (2.0)	ND (2.0)	
Perfluorooctanoic acid (PFOA)	16	18	ND (2.0)	ND (2.0)	7.9	ND (2.0)	ND (2.0)	18	ND (2.0)	ND (2.0)	23	ND (2.0)	ND (2.0)	
Perfluorooctanesulfonic acid (PFOS)	180	170	ND (2.0)	ND (2.0)	79	ND (2.0)	ND (2.0)	170	ND (2.0)	ND (2.0)	220	ND (2.0)	ND (2.0)	
Perfluorononanoic acid (PFNA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorodecanoic acid (PFDA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-EtFOSAA	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroundecanoic acid (PFUnA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-MeFOSAA	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorododecanoic acid (PFDoA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotridecanoic acid (PFTDA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotetradecanoic acid (PFTA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Total (All Compounds)	784.4	863.8	ND (2.0)	ND (2.0)	280	ND (2.0)	ND (2.0)	863.8	ND (2.0)	ND (2.0)	876.6	ND (2.0)	ND (2.0)	
Regulated Total	20	689.7	763.8	ND (2.0)	ND (2.0)	246.9	ND (2.0)	763.8	ND (2.0)	ND (2.0)	778.6	ND (2.0)	ND (2.0)	

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	29 Mountain Rd																				
		-			-			-			-			3,090								
		1/8/2020			2/24/2020			3/11/2020			5/8/2020			6/3/2020			6/30/2020			7/14/2020		
Flow Meter Reading (gallons)																						
Sampling Date		POET INSTALLED	INF	MID	EFF	INF	MID	EFF	EFF DUPLICATE	EFF	INF	MID	EFF	EFF	INF	MID	EFF	EFF				
EPA 537.1 (ng/L)																						
Perfluorobutanesulfonic acid (PFBS)		9.6	6.7	ND (2.0)	ND (2.0)	4	ND (2.0)	2.9	2	ND (2.0)	4.9	ND (2.0)	4.2	ND (2.0)	ND (2.0)	ND (2.0)	4.2	ND (2.0)				
Perfluorohexanoic acid (PFHxA)		2.5	2	ND (2.0)	ND (2.0)	2	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.1	ND (2.0)	ND (2.0)	ND (2.0)	2.1	ND (2.0)				
Perfluorohexanesulfonic acid (PFHxS)		59	41	ND (2.0)	ND (2.0)	21	ND (2.0)	16	10	ND (2.0)	25	ND (2.0)	23	ND (2.0)	ND (2.0)	ND (2.0)	23	ND (2.0)				
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Perfluorooctanoic acid (PFOA)		5.3	5.1	ND (2.0)	ND (2.0)	4.4	ND (2.0)	3.5	2.2	ND (2.0)	4.7	ND (2.0)	4.5	ND (2.0)	ND (2.0)	ND (2.0)	4.5	ND (2.0)				
Perfluorooctanesulfonic acid (PFOS)		53	38	ND (2.0)	ND (2.0)	27	ND (2.0)	21	13	ND (2.0)	21	ND (2.0)	22	ND (2.0)	ND (2.0)	ND (2.0)	22	ND (2.0)				
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Perfluorotridecanoic acid (PFTDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Total (All Compounds)		129.4	92.8	ND (2.0)	ND (2.0)	58.4	ND (2.0)	43.4	27.2	ND (2.0)	55.6	ND (2.0)	55.8	ND (2.0)	ND (2.0)	ND (2.0)	55.8	ND (2.0)				
Regulated Total	20	117.3	84.1	ND (2.0)	ND (2.0)	52.4	ND (2.0)	40.5	25.2	ND (2.0)	50.7	ND (2.0)	49.5	ND (2.0)	ND (2.0)	ND (2.0)	49.5	ND (2.0)				

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	29 Mountain Rd								
		5,301			25,532			32,996		
		7/29/2020			1/29/2021			4/20/2021		
Flow Meter Reading (gallons)										
Sampling Date		INF	MID	EFF	INF	MID	EFF	INF	MID	EFF
EPA 537.1 (ng/L)										
Perfluorobutanesulfonic acid (PFBS)		5.2	ND (2.0)	ND (2.0)	3.8	ND (2.0)	ND (2.0)	4	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		30	ND (2.0)	ND (2.0)	21	ND (2.0)	ND (2.0)	22	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		3.8	ND (2.0)	ND (2.0)	3.9	ND (2.0)	ND (2.0)	4.7	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		22	ND (2.0)	ND (2.0)	16	ND (2.0)	ND (2.0)	18	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		61.0	ND (2.0)	ND (2.0)	44.7	ND (2.0)	ND (2.0)	48.7	ND (2.0)	ND (2.0)
Regulated Total	20	55.8	ND (2.0)	ND (2.0)	40.9	ND (2.0)	ND (2.0)	44.7	ND (2.0)	ND (2.0)

NOTES:
Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
ND = Not detected above the lab reporting limits shown in parentheses.
Bolded values exceed the proposed Method 1 Standard
MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
 PFAS Drinking Water Summary
 Princeton, Massachusetts
 RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	30 Mountain Rd									
		-				37			170		
		1/27/2020	6/5/2020	10/13/2020	2/15/2021	2/22/2021		4/26/2021			
Flow Meter Reading (gallons)											
Sampling Date											
					POET INSTALLED	INF	MID	EFF	INF	MID	EFF
EPA 537.1 (ng/l)											
Perfluorobutanesulfonic acid (PFBS)		<2.0	<2.0	3.2		2.2	ND (2.0)	ND (2.0)	2.2	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		<2.0	<2.0	2.9		2.1	ND (2.0)	ND (2.0)	2.1	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		4.4	3.9	22		16	ND (2.0)	ND (2.0)	13	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	2.3		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		6.1	4.6	8.6		8.1	ND (2.0)	ND (2.0)	6.9	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		5.4	4.1	16		13	ND (2.0)	ND (2.0)	12	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		15.9	12.6	52.7		41.4	ND (2.0)	ND (2.0)	36.2	ND (2.0)	ND (2.0)
Regulated Total	20	15.9	12.6	46.6		37.1	ND (2.0)	ND (2.0)	31.9	ND (2.0)	ND (2.0)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts	30 Mountain Rd (Inn Well)
Well Depth	Contingency Plan	1,000+
Sampling Date	GW-1 Standard & MMCL	5/25/2021
SOP-454 PFAS (ng/L)		
Perfluorobutanesulfonic acid (PFBS)		<2.0
Perfluorohexanoic acid (PFHxA)		<2.0
Perfluorohexanesulfonic acid (PFHxS)		3.9
Perfluoroheptanoic acid (PFHpA)		ND (2.0)
Perfluorooctanoic acid (PFOA)		13
Perfluorooctanesulfonic acid (PFOS)		110
Perfluorononanoic acid (PFNA)		7.5
Perfluorodecanoic acid (PFDA)		ND (2.0)
N-EtFOSAA		ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)
N-MeFOSAA		ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)
Perfluorobutanoic acid (PFBA)		3.9
Perfluoropentanoic acid (PFPeA)		3.4
4,8-dioxa-3H-perfluorononanoic acid (ADONA)		ND (2.0)
Hexafluoropropylene oxide dimer acid (HFPO-DA)		ND (2.0)
8:2 Fluorotelomersulfonic acid (8:2FTS A)		ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)		ND (2.0)
Perfluoroheptanesulfonic acid (PFHpS)		ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)
4:2 Fluorotelomersulfonic acid (4:2FTS A)		ND (2.0)
Perfluorodecanesulfonic acid (PFDS)		ND (2.0)
Perfluorooctanesulfonamide (FOSA)		ND (2.0)
Perfluorononanesulfonic acid (PFNS)		ND (2.0)
Perfluoro-1-hexanesulfonamide (FHxSA)		ND (2.0)
Perfluoro-1-butanedisulfonamide (FBSA)		ND (2.0)
Perfluoro-5-oxahexanoic acid (PFMBA)		ND (2.0)
6:2 Fluorotelomersulfonic acid (6:2FTS A)		ND (2.0)
Perfluoropentanesulfonic acid (PFPeS)		ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)		ND (2.0)
Total (All Compounds)		141.7
Regulated Total	20	134.4

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	33 Mountain Rd				
		UNKNOWN				
Well Depth (feet)						
Sampling Date		2/7/2020	7/22/2020	1/21/2021	4/16/2021	10/18/2021
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	2.5	2.2	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	2.5	2.2	ND (2.0)
Regulated Total	20	ND (2.0)	ND (2.0)	2.5	2.2	ND (2.0)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	38 Mountain Rd				
		2/14/2020	7/21/2020	1/20/2021	4/27/2021	11/11/2021
Well Depth (feet)						
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorooctanoic acid (PFOA)		ND (2.0)	3	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorooctanesulfonic acid (PFOS)		2.2	2.4	2.1	ND (2.0)	ND (1.8)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Total (All Compounds)		2.2	5.4	2.1	ND (2.0)	ND (1.8)
Regulated Total	20	2.2	5.4	2.1	ND (2.0)	ND (1.8)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
 PFAS Drinking Water Summary
 Princeton, Massachusetts
 RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	51 Mountain Rd														
		-		211					1,080			3,312			11,491	
		2/12/2020	5/1/2020	5/28/2020			6/23/2020			7/31/2020			11/11/2020			
			POET INSTALLED	INF	MID	EFF	EFF DUPLICATE	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF
EPA 537.1 (ng/l)																
Perfluorobutanesulfonic acid (PFBS)	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorohexanoic acid (PFHxA)	6.9		6.1	ND (2.0)	ND (2.0)	ND (2.0)	5.1	ND (2.0)	ND (2.0)	6.8	ND (2.0)	ND (2.0)	6.6	ND (2.0)	ND (2.0)	
Perfluorohexanesulfonic acid (PFHxS)	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroheptanoic acid (PFHpA)	9.5		9.4	ND (2.0)	ND (2.0)	ND (2.0)	9.0	ND (2.0)	ND (2.0)	11	ND (2.0)	ND (2.0)	9.2	ND (2.0)	ND (2.0)	
Perfluorooctanoic acid (PFOA)	29		29	ND (2.0)	ND (2.0)	ND (2.0)	28	ND (2.0)	ND (2.0)	30	ND (2.0)	ND (2.0)	30	ND (2.0)	ND (2.0)	
Perfluorooctanesulfonic acid (PFOS)	24		23	ND (2.0)	2.9	ND (2.0)	21	ND (2.0)	ND (2.0)	24	ND (2.0)	ND (2.0)	25	ND (2.0)	ND (2.0)	
Perfluorononanoic acid (PFNA)	ND (4.0)		3	ND (2.0)	ND (2.0)	ND (2.0)	2.5	ND (2.0)	ND (2.0)	3.2	ND (2.0)	ND (2.0)	3.1	ND (2.0)	ND (2.0)	
Perfluorodecanoic acid (PFDA)	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-EtFOSAA	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroundecanoic acid (PFUnA)	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-MeFOSAA	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorododecanoic acid (PFDA)	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotridecanoic acid (PFTDA)	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotetradecanoic acid (PFTA)	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Total (All Compounds)		69.4		70.5	ND (2.0)	2.9	ND (2.0)	65.7	ND (2.0)	ND (2.0)	75.0	ND (2.0)	ND (2.0)	74.9	ND (2.0)	
Regulated Total	20	62.5		64.4	ND (2.0)	2.9	ND (2.0)	60.6	ND (2.0)	ND (2.0)	68.2	ND (2.0)	ND (2.0)	68.3	ND (2.0)	

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	51 Mountain Rd		
		18,344		
		2/5/2021		
Flow Meter Reading (gallons)				
Sampling Date		INF	MID	EFF
EPA 537.1 (ng/l)				
Perfluorobutanesulfonic acid (PFBS)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)	4.1	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)	7.8	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)	25	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)	18	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)	2.2	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTDA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		57.1	ND (2.0)	ND (2.0)
Regulated Total	20	53.0	ND (2.0)	ND (2.0)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	54 Mountain Rd												
		15,502			42,195			59,957			108,792			
		2/26/2020	6/2/2020	6/22/2020	8/5/2020	8/5/2020	9/2/2020	9/2/2020	11/18/2020	11/18/2020	11/18/2020	11/18/2020		
	POET INSTALLED	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	
EPA 537.1 (ng/L)														
Perfluorobutanesulfonic acid (PFBS)	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)	5.2		5.0	ND (2.0)	ND (2.0)	4.2	ND (2.0)	ND (2.0)	4.3	ND (2.0)	ND (2.0)	5.7	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)	7.6		7.9	ND (2.0)	ND (2.0)	6.7	ND (2.0)	ND (2.0)	7.4	ND (2.0)	ND (2.0)	9.6	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)	20		24	ND (2.0)	ND (2.0)	23	ND (2.0)	ND (2.0)	24	ND (2.0)	ND (2.0)	27	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)	18		24	ND (2.0)	ND (2.0)	22	ND (2.0)	ND (2.0)	21	ND (2.0)	ND (2.0)	22	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)	ND (4.0)		2.5	ND (2.0)	ND (2.0)	2.2	ND (2.0)	ND (2.0)	2.9	ND (2.0)	ND (2.0)	2.6	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTDA)	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		50.8	63.4	ND (2.0)	ND (2.0)	58.1	ND (2.0)	ND (2.0)	59.6	ND (2.0)	ND (2.0)	66.9	ND (2.0)	ND (2.0)
Regulated Total	20	45.6	58.4	ND (2.0)	ND (2.0)	53.9	ND (2.0)	ND (2.0)	55.3	ND (2.0)	ND (2.0)	61.2	ND (2.0)	ND (2.0)

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	54 Mountain Rd								
		159,296			191,908			300,348		
		2/15/2021	4/23/2021	10/28/2021	2/15/2021	4/23/2021	10/28/2021	2/15/2021	4/23/2021	10/28/2021
	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	
EPA 537.1 (ng/L)										
Perfluorobutanesulfonic acid (PFBS)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)	4.7	ND (2.0)	ND (2.0)	6.8	ND (2.0)	ND (2.0)	5.1	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)	8	ND (2.0)	ND (2.0)	10	ND (2.0)	ND (2.0)	8.6	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)	23	ND (2.0)	ND (2.0)	32	ND (2.0)	ND (2.0)	24	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)	23	ND (2.0)	ND (2.0)	30	ND (2.0)	ND (2.0)	25	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)	2.5	ND (2.0)	ND (2.0)	3.3	ND (2.0)	ND (2.0)	2.9	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTDA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		61.2	ND (2.0)	ND (2.0)	82.1	ND (2.0)	ND (2.0)	65.6	ND (2.0)	ND (2.0)
Regulated Total	20	56.5	ND (2.0)	ND (2.0)	75.3	ND (2.0)	ND (2.0)	60.5	ND (2.0)	ND (2.0)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	S8 Mountain Rd														
		2131					8,428			22,138			50,278			
		7/7/2020		7/14/2020			7/31/2020			8/31/2020			11/6/2020			
		POET INSTALLED	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF		
EPA 537.1 (ng/L)																
Perfluorobutanesulfonic acid (PFBS)	ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	15	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorohexanoic acid (PFHxA)	19	19	ND (2.0)	ND (2.0)	3.6	ND (2.0)	ND (2.0)	26	ND (2.0)	ND (2.0)	11	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorohexanesulfonic acid (PFHxS)	ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	6	ND (2.0)	ND (2.0)	94	ND (2.0)	ND (2.0)	18	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroheptanoic acid (PFHpA)	29	31	ND (2.0)	ND (2.0)	18	ND (2.0)	ND (2.0)	270	ND (2.0)	ND (2.0)	67	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorooctanoic acid (PFOA)	89	95	ND (2.0)	ND (2.0)	35	ND (2.0)	ND (2.0)	19	ND (2.0)	ND (2.0)	130	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorooctanesulfonic acid (PFOS)	210	20	ND (2.0)	ND (2.0)	3.5	ND (2.0)	ND (2.0)	5.7	ND (2.0)	ND (2.0)	14	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorononanoic acid (PFNA)	20	6.2	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	4.2	ND (2.0)	ND (2.0)	4.2	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorodecanoic acid (PFDA)	ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-EtFOSAA	ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroundecanoic acid (PFUnA)	ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-MeFOSAA	ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorododecanoic acid (PFDoA)	ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotridecanoic acid (PFTDA)	ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotetradecanoic acid (PFTA)	ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Total (All Compounds)	373.2	401.9	ND (2.0)	ND (2.0)	66.1	ND (2.0)	ND (2.0)	431.7	ND (2.0)	ND (2.0)	244.2	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Regulated Total	20	354.2	382.9	ND (2.0)	62.5	ND (2.0)	ND (2.0)	416.7	ND (2.0)	ND (2.0)	233.2	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	S8 Mountain Rd									
		66,979					81,707			133,473	
		2/5/2021					4/21/2021			10/18/2021	
		INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	
EPA 537.1 (ng/L)											
Perfluorobutanesulfonic acid (PFBS)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorohexanoic acid (PFHxA)	5	ND (2.0)	ND (2.0)	15	ND (2.0)	ND (2.0)	22	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorohexanesulfonic acid (PFHxS)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroheptanoic acid (PFHpA)	9	ND (2.0)	ND (2.0)	26	ND (2.0)	ND (2.0)	36	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroctanoic acid (PFOA)	23	ND (2.0)	ND (2.0)	83	ND (2.0)	ND (2.0)	120	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorooctanesulfonic acid (PFOS)	44	ND (2.0)	ND (2.0)	180	ND (2.0)	ND (2.0)	290	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorononanoic acid (PFNA)	6.3	ND (2.0)	ND (2.0)	16	ND (2.0)	ND (2.0)	25	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorodecanoic acid (PFDA)	ND (2.0)	ND (2.0)	ND (2.0)	4.4	ND (2.0)	ND (2.0)	8.2	ND (2.0)	ND (2.0)	ND (2.0)	
N-EtFOSAA	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroundecanoic acid (PFUnA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-MeFOSAA	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorododecanoic acid (PFDoA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotridecanoic acid (PFTDA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotetradecanoic acid (PFTA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Total (All Compounds)	87.7	ND (2.0)	ND (2.0)	324.4	ND (2.0)	ND (2.0)	501.2	ND (2.0)	ND (2.0)	ND (2.0)	
Regulated Total	20	82.7	ND (2.0)	309.4	ND (2.0)	ND (2.0)	479.2	ND (2.0)	ND (2.0)	ND (2.0)	

NOTES:
Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
ND = Not detected above the lab reporting limits shown in parentheses.
Bolded values exceed the proposed Method 1 Standard
MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	64 Mountain Rd																	
		-			Not Recorded			11,667			27,440			38,902					
		1/30/2020			2/18/2020			3/3/2020			5/8/2020			6/18/2020			7/29/2020		
		POET INSTALLED			INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF			
EPA 537.1 (ng/L)																			
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluorohexanoic acid (PFHxA)		14		20	ND (2.0)	ND (2.0)	15	ND (2.0)	ND (2.0)	18	ND (2.0)	ND (2.0)	2	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluoroheptanoic acid (PFHpA)		19		23	ND (2.0)	ND (2.0)	18	ND (2.0)	ND (2.0)	22	ND (2.0)	ND (2.0)	2.6	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluorooctanoic acid (PFOA)		34		44	ND (2.0)	ND (2.0)	34	ND (2.0)	ND (2.0)	43	ND (2.0)	ND (2.0)	5.3	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluorooctanesulfonic acid (PFOS)		22		20	ND (2.0)	ND (2.0)	15	ND (2.0)	ND (2.0)	20	ND (2.0)	ND (2.0)	2.4	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluorononanoic acid (PFNA)		ND (2.0)		2.5	ND (2.0)	ND (2.0)	2.2	ND (2.0)	ND (2.0)	2.3	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluorodecanoic acid (PFDA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
N-EtFOSAA		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluoroundecanoic acid (PFUnA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
N-MeFOSAA		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluorododecanoic acid (PFDoA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluorotetradecanoic acid (PFTA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Total (All Compounds)		89		109.5	ND (2.0)	ND (2.0)	84.2	ND (2.0)	ND (2.0)	105.3	ND (2.0)	ND (2.0)	12.4	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Regulated Total	20	75		89.5	ND (2.0)	ND (2.0)	69.2	ND (2.0)	ND (2.0)	87.3	ND (2.0)	ND (2.0)	10.3	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	64 Mountain Rd											
		75,168			86,631			97,368			-		
		11/6/2020			1/29/2021			4/21/2021			10/19/2021		
		INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF
EPA 537.1 (ng/L)													
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	2.4	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	28.0	ND (1.9)	ND (2.1)
Perfluorohexanoic acid (PFHxA)		14	ND (2.0)	ND (2.0)	18	ND (2.0)	ND (2.0)	11	ND (2.0)	ND (2.0)	25	ND (1.9)	ND (2.1)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (2.1)
Perfluoroheptanoic acid (PFHpA)		18	ND (2.0)	ND (2.0)	24	ND (2.0)	ND (2.0)	12	ND (2.0)	ND (2.0)	25	ND (1.9)	ND (2.1)
Perfluorooctanoic acid (PFOA)		43	ND (2.0)	ND (2.0)	53	ND (2.0)	ND (2.0)	19	ND (2.0)	ND (2.0)	44	ND (1.9)	ND (2.1)
Perfluorooctanesulfonic acid (PFOS)		16	ND (2.0)	ND (2.0)	22	ND (2.0)	ND (2.0)	12	ND (2.0)	ND (2.0)	21	ND (1.9)	ND (2.1)
Perfluorononanoic acid (PFNA)		3.1	ND (2.0)	ND (2.0)	5.1	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	3.4	ND (1.9)	ND (2.1)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (2.1)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (2.1)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (2.1)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (2.1)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (2.1)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (2.1)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (2.1)
Total (All Compounds)		94.1	ND (2.0)	ND (2.0)	124.5	ND (2.0)	ND (2.0)	54.0	ND (2.0)	ND (2.0)	146.4	ND (1.9)	ND (2.1)
Regulated Total	20	80.1	ND (2.0)	ND (2.0)	104.1	ND (2.0)	ND (2.0)	43.0	ND (2.0)	ND (2.0)	93.4	ND (1.9)	ND (2.1)

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
 POET System Monitoring
 Princeton, Massachusetts
 RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	5 Prospect Street													
		137			182			188			47,737				
Flow Meter Reading (gallons)		1/24/2020			1/31/2020			2/7/2020			6/18/2020				
Sampling Date		1/13/2020	1/21/2020	1/24/2020	1/31/2020	1/31/2020	1/31/2020	1/31/2020	1/31/2020	1/31/2020	1/31/2020	1/31/2020	1/31/2020	1/31/2020	1/31/2020
Notes		POET INSTALLED	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	
EPA 537.1 (ng/L)															
Perfluorobutanesulfonic acid (PFBS)		9.4	2.4	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.4	ND (2.0)	ND (2.0)	
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorohexanesulfonic acid (PFHxS)		32	6.6	ND (2.0)	ND (2.0)	2.5	ND (2.0)	ND (2.0)	2.4	ND (2.0)	ND (2.0)	7	ND (2.0)	ND (2.0)	
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorooctanesulfonic acid (PFOS)		6.2	3	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.8	ND (2.0)	ND (2.0)	
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Total (All Compounds)		47.6	12.0	ND (2.0)	ND (2.0)	2.5	ND (2.0)	ND (2.0)	2.4	ND (2.0)	ND (2.0)	12.2	ND (2.0)	ND (2.0)	
Regulated Total	20	38.2	9.6	ND (2.0)	ND (2.0)	2.5	ND (2.0)	ND (2.0)	2.4	ND (2.0)	ND (2.0)	9.8	ND (2.0)	ND (2.0)	

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	5 Prospect Street														
		47,737			70,000			156,306			174,265			188,495		
Flow Meter Reading (gallons)		6/18/2020			7/27/2020			11/6/2020			1/29/2021			4/19/2021		
Sampling Date		INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF
Notes																
EPA 537.1 (ng/L)																
Perfluorobutanesulfonic acid (PFBS)		2.4	ND (2.0)	ND (2.0)	2.2	ND (2.0)	ND (2.0)	2.3	ND (2.0)	ND (2.0)	4.6	ND (2.0)	ND (2.0)	4.2	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		7	ND (2.0)	ND (2.0)	5.6	ND (2.0)	ND (2.0)	6	ND (2.0)	ND (2.0)	14	ND (2.0)	ND (2.0)	17	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.2	ND (2.0)	ND (2.0)	2.2	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		2.8	ND (2.0)	ND (2.0)	2.6	ND (2.0)	ND (2.0)	2.4	ND (2.0)	ND (2.0)	4.1	ND (2.0)	ND (2.0)	4.1	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		12.2	ND (2.0)	ND (2.0)	10.4	ND (2.0)	ND (2.0)	10.7	ND (2.0)	ND (2.0)	24.9	ND (2.0)	ND (2.0)	27.5	ND (2.0)	ND (2.0)
Regulated Total	20	9.8	ND (2.0)	ND (2.0)	8.2	ND (2.0)	ND (2.0)	8.4	ND (2.0)	ND (2.0)	20.3	ND (2.0)	ND (2.0)	23.3	ND (2.0)	ND (2.0)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	7 Prospect St								
		-						6,662		
		12/9/2019	6/5/2020	10/16/2020	1/19/2021	4/23/2021	6/23/2021	7/22/2021		
					POET INSTALLED	INF	MID	EFF		
EPA 537.1 (ng/L)										
Perfluorobutanesulfonic acid (PFBS)		3.1	2.7	2.9	3.4	3.7		3.6	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		13	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		8.8	11	11	11	15		16	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		4.5	6	5.2	5	6.9		7.8	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		16.4	19.7	19.1	19.4	25.6		40.4	ND (2.0)	ND (2.0)
Regulated Total	20	13.3	17.0	16.2	16.0	21.9		23.8	ND (2.0)	ND (2.0)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	11 Prospect St							
		~137'							
		1/8/2020	2/20/2020			9/10/2020	1/28/2021	4/21/2021	11/3/2021
Well Depth (feet)			INF	MID	EFF	INF	INF	INF	INF
Sampling Date									
EPA 537.1 (ng/L)									
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.3
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorohexanesulfonic acid (PFHxS)		2.1	3.3	ND (2.0)	ND (2.0)	3.4	4.7	5.8	9.0
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorooctanesulfonic acid (PFOS)		2.3	2.5	ND (2.0)	ND (2.0)	3.7	3.5	4.1	5.1
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Total (All Compounds)		4.4	5.8	ND (2.0)	ND (2.0)	7.1	8.2	9.9	16.4
Regulated Total	20	4.4	5.8	ND (2.0)	ND (2.0)	7.1	8.2	9.9	14.1

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	16 Prospect St					
		255'					
		1/22/2020	6/5/2020	10/8/2020	1/20/2021	4/22/2021	11/5/2021
Well Depth (feet)							
Sampling Date							
EPA 537.1 (ng/L)							
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	17 Prospect St					
		UNKNOWN					
		1/8/2020	6/5/2020	10/8/2020	1/19/2021	4/20/2021	11/9/2021
Well Depth (feet)							
Sampling Date							
EPA 537.1 (ng/L)							
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	3.2
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorooctanesulfonic acid (PFOS)		2.8	ND (2.0)	2.0	2.0	2.4	9.5
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Total (All Compounds)		2.8	ND (2.0)	2.0	2.0	2.4	12.7
Regulated Total	20	2.8	ND (2.0)	2.0	2.0	2.4	12.7

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	18 Prospect St					
		UNKNOWN					
		1/8/2020	6/5/2020	10/8/2020	1/22/2021	4/19/2021	11/5/2021
Well Depth (feet)							
Sampling Date							
EPA 537.1 (ng/L)							
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.5
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	2.0	ND (2.0)	2.4
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	2.0	ND (2.0)	4.9
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	2.0	ND (2.0)	4.9

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	21 Prospect St			
		UNKNOWN			
Well Depth (feet)					
Sampling Date		2/5/2020	7/22/2020	1/29/2021	4/19/2021
EPA 537.1 (ng/L)					
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	26 Prospect St		
		UNKNOWN		
Well Depth (feet)				
Sampling Date		2/6/2020	7/23/2020	3/3/2021
EPA 537.1 (ng/L)				
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	2.4
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	2.4
Regulated Total	20	ND (2.0)	ND (2.0)	2.4

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	41 Prospect Street										
		-		164,724			Not Recorded			167,619		
		5/15/2020	10/13/2020	12/30/2020			2/15/2021			3/25/2021		
Flow Meter Reading (gallons)												
Sampling Date			EXISTING POET ACTIVE	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF
EPA 537.1 (ng/l)												
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	2.6	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	4.6	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	14	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	9.9	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTriDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTeA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	31.1		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20	ND (2.0)	28.5		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	41 Prospect Street						
		169,007			178,621			
		4/21/2021			11/4/2021			
Flow Meter Reading (gallons)								
Sampling Date		INF	MID	EFF	INF	MID	EFF	
EPA 537.1 (ng/l)								
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotridecanoic acid (PFTriDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Perfluorotetradecanoic acid (PFTeA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	41 Prospect Street Runoff
Flow Meter Reading (gallons)		-
Sampling Date		4/22/2021
EPA 537.1 (ng/L)		
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)
N-EtFOSAA		ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)
N-MeFOSAA		ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)
Total (All Compounds)		ND (2.0)
Regulated Total	20	ND (2.0)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	2 Radford Rd				
		2/19/2020	11/30/2021	1/21/2021	4/21/2021	11/5/2021
Well Depth (feet)						
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	7 Radford Rd				
		2/28/2020	7/21/2020	1/21/2021	4/21/2021	11/3/2021
Well Depth (feet)						
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	2.7	2.2
Perfluorooctanesulfonic acid (PFOS)		2.3	3.2	2.5	3.2	3.7
Perfluorononanoic acid (PFNA)		ND (2.0)	2.7	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		2.3	5.9	2.5	5.9	5.9
Regulated Total	20	2.3	5.9	2.5	5.9	5.9

NOTES:
Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
ND = Not detected above the lab reporting limits shown in parentheses.
Bolded values exceed the proposed Method 1 Standard
MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	8 Radford Rd				
		2/28/2020	7/21/2020	1/21/2021	4/21/2021	11/3/2021
Well Depth (feet)						
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	1.8
Perfluorooctanoic acid (PFOA)		3.9	4.1	3.9	5.4	5.1
Perfluorooctanesulfonic acid (PFOS)		2.5	3.1	2.4	3.6	3.5
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		6.4	7.2	6.3	9.0	10.4
Regulated Total	20	6.4	7.2	6.3	9.0	10.4

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	11 Radford Rd				
		2/14/2020	7/22/2021	1/21/2021	4/22/2021	11/5/2021
Well Depth (feet)						
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		2.7	3.1	2.3	3.7	3.6
Perfluorooctanesulfonic acid (PFOS)		2.3	3.1	2.1	2.9	3.3
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		5.0	6.2	4.4	6.6	6.9
Regulated Total	20	5.0	6.2	4.4	6.6	6.9

NOTES:
Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
ND = Not detected above the lab reporting limits shown in parentheses.
Bolded values exceed the proposed Method 1 Standard
MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
 PFAS Drinking Water Summary
 Princeton, Massachusetts
 RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	12 Radford Rd													
		879			1,943			3,465			6,539				
		5/1/2020	6/16/2020	6/30/2020	7/31/2020	7/31/2020	8/31/2020	8/31/2020	8/31/2020	11/3/2020	11/3/2020	11/3/2020			
		POET INSTALLED	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	
EPA 537.1 (ng/l)															
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		2.4		2.7	ND (2.0)	ND (2.0)	2.3	ND (2.0)	ND (2.0)	2.9	ND (2.0)	ND (2.0)	2.7	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		3.2		3.2	ND (2.0)	ND (2.0)	3.3	ND (2.0)	ND (2.0)	4.2	ND (2.0)	ND (2.0)	3.7	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		11		9.8	ND (2.0)	ND (2.0)	11	ND (2.0)	ND (2.0)	13	ND (2.0)	ND (2.0)	13	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		8.3		7.5	ND (2.0)	ND (2.0)	8.9	ND (2.0)	ND (2.0)	8.5	ND (2.0)	ND (2.0)	8.7	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		24.9		23.2	ND (2.0)	ND (2.0)	25.5	ND (2.0)	ND (2.0)	28.6	ND (2.0)	ND (2.0)	28.1	ND (2.0)	ND (2.0)
Regulated Total	20	22.5		20.5	ND (2.0)	ND (2.0)	23.2	ND (2.0)	ND (2.0)	25.7	ND (2.0)	ND (2.0)	25.4	ND (2.0)	ND (2.0)

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	12 Radford Rd					
		9,916			15,126		
		1/29/2021			4/23/2021		
		INF	MID	EFF	INF	MID	EFF
EPA 537.1 (ng/l)							
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		3.4	ND (2.0)	ND (2.0)	2.9	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		5.1	ND (2.0)	ND (2.0)	4.1	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		14	ND (2.0)	ND (2.0)	14	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		10	ND (2.0)	ND (2.0)	9.9	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		32.5	ND (2.0)	ND (2.0)	30.9	ND (2.0)	ND (2.0)
Regulated Total	20	29.1	ND (2.0)	ND (2.0)	28.0	ND (2.0)	ND (2.0)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	13 Radford Rd				
		UNKNOWN				
Well Depth (feet)						
Sampling Date		3/4/2020	7/21/2020	1/22/2021	4/21/2021	11/4/2021
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
 PFAS Drinking Water Summary
 Princeton, Massachusetts
 RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	15 Radford Rd												
		381			1,947			4,504			7,391			
		-		-		-		-		-		-		
		9/18/2020	10/21/2020	10/30/2020	12/4/2020	2/5/2021	4/21/2021							
Sampling Date	POET INSTALLED	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	
EPA 537.1 (ng/L)														
Perfluorobutanesulfonic acid (PFBS)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)	3	2.2	ND (2.0)	ND (2.0)	ND (2.0)	2.4	ND (2.0)	ND (2.0)	2.9	ND (2.0)	ND (2.0)	2.7	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)	4.3	3.4	ND (2.0)	ND (2.0)	ND (2.0)	3.2	ND (2.0)	ND (2.0)	4.3	ND (2.0)	ND (2.0)	3.8	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)	15	12	ND (2.0)	ND (2.0)	ND (2.0)	14	ND (2.0)	ND (2.0)	12	ND (2.0)	ND (2.0)	13	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)	11	8.8	ND (2.0)	ND (2.0)	ND (2.0)	8.9	ND (2.0)	ND (2.0)	9	ND (2.0)	ND (2.0)	8.2	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTDA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)	33.3	26.4	ND (2.0)	ND (2.0)	ND (2.0)	28.5	ND (2.0)	ND (2.0)	28.2	ND (2.0)	ND (2.0)	27.7	ND (2.0)	ND (2.0)
Regulated Total	20	30.3	24.2	ND (2.0)	ND (2.0)	26.1	ND (2.0)	ND (2.0)	25.3	ND (2.0)	ND (2.0)	25.0	ND (2.0)	ND (2.0)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	18 Radford			
		9/18/2020	1/29/2021	4/26/2021	11/5/2021
Well Depth (feet)					
Sampling Date					
EPA 537.1 (ng/L)					
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	2.0	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	2.7	2.2	2
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	2.3	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		5.2	6.5	6	5.9
Perfluorooctanesulfonic acid (PFOS)		4.3	5.0	3.7	5.1
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		9.5	18.5	11.9	13.0
Regulated Total	20	9.5	13.8	9.7	11.0

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	23 Radford Rd			
		7/22/2020	1/22/2021	4/26/2021	11/5/2021
Well Depth (feet)					
Sampling Date					
EPA 537.1 (ng/L)					
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	2.8	ND (2.0)	2
Perfluorohexanoic acid (PFHxA)		2.2	2.4	ND (2.0)	2
Perfluorohexanesulfonic acid (PFHxS)		2.8	3	ND (2.0)	2.6
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	2.3	ND (2.0)	ND (1.9)
Perfluorooctanoic acid (PFOA)		6.5	6.4	5.2	6.6
Perfluorooctanesulfonic acid (PFOS)		5.5	5.7	4.1	6.3
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Total (All Compounds)		17.0	22.6	9.3	19.5
Regulated Total	20	14.8	17.4	9.3	15.5

NOTES:
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 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	28 Radford Rd				
		UNKNOWN				
Well Depth (feet)						
Sampling Date		1/30/2020	7/21/2020	1/21/2021	4/26/2021	10/25/2021
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		2.1	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorohexanesulfonic acid (PFHxS)		2.7	ND (2.0)	ND (2.0)	2.2	2.5
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorooctanoic acid (PFOA)		5.4	4.6	4.8	6.2	5.7
Perfluorooctanesulfonic acid (PFOS)		7	4.0	3.8	5.5	5.2
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Total (All Compounds)		17.2	8.6	8.6	13.9	13.4
Regulated Total	20	15.1	8.6	8.6	13.9	13.4

NOTES:
Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
ND = Not detected above the lab reporting limits shown in parentheses.
Bolded values exceed the proposed Method 1 Standard
MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	29 Radford Rd				
		UNKNOWN				
Well Depth (feet)		3/17/2020	7/21/2020	1/21/2021	4/22/2021	10/25/2021
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorooctanoic acid (PFOA)		3.2	2.4	3.3	3.3	4.2
Perfluorooctanesulfonic acid (PFOS)		3.5	2.8	3.3	3.4	3.7
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Total (All Compounds)		6.7	5.2	6.6	6.7	7.9
Regulated Total	20	6.7	5.2	6.6	6.7	7.9

NOTES:
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 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	33 Radford Rd				
		UNKNOWN				
Well Depth (feet)		5/29/2020	10/8/2020	1/29/2021	4/19/2021	11/8/2021
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	2.2	ND (2.0)	2.3
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	2.2	ND (2.0)	2.3
Regulated Total	20	ND (2.0)	ND (2.0)	2.2	ND (2.0)	2.3

NOTES:
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 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
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TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	37 Radford Rd				
		70'				
Well Depth (feet)						
Sampling Date		4/28/2020	10/8/2020	1/20/2021	4/20/2021	11/5/2021
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.0
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	2.6	2.8	1.9
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorooctanesulfonic acid (PFOS)		2.1	2.5	2.5	2.2	2.3
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)
Total (All Compounds)		2.1	2.5	5.1	5.0	6.2
Regulated Total	20	2.1	2.5	5.1	5.0	4.2

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

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TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	7 Thompson Road	
		5/6/2021	11/4/2021
Well Depth (feet)			
Sampling Date			
EPA 537.1 (ng/L)			
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (1.8)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (1.8)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (1.8)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (1.8)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (1.8)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (1.8)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (1.8)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (1.8)
N-EtFOSAA		ND (2.0)	ND (1.8)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (1.8)
N-MeFOSAA		ND (2.0)	ND (1.8)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (1.8)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (1.8)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (1.8)
Total (All Compounds)		ND (2.0)	ND (1.8)
Regulated Total	20	ND (2.0)	ND (1.8)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	1 Worcester Rd				
		UNKNOWN				
Well Depth (feet)		1/7/2020	6/11/2020	12/16/2020	4/26/2021	11/4/2021
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorooctanoic acid (PFOA)		ND (2.0)	2.5	ND (2.0)	2	2.5
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Total (All Compounds)		ND (2.0)	2.5	ND (2.0)	2.0	2.5
Regulated Total	20	ND (2.0)	2.5	ND (2.0)	2.0	2.5

NOTES:
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 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	10 Worcester Rd					
		UNKNOWN					
Well Depth (feet)							
Sampling Date		1/9/2020	6/11/2020	10/16/2020	1/21/2021	4/19/2021	11/5/2021
EPA 537.1 (ng/L)							
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		3.8	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		8	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		3.6	3.0	ND (2.0)	3.2	3.1	2.9
Perfluorooctanesulfonic acid (PFOS)		2.3	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		2.7	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		20.4	3.0	ND (2.0)	3.2	3.1	2.9
Regulated Total	20	16.6	3.0	ND (2.0)	3.2	3.1	2.9

NOTES:
Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
ND = Not detected above the lab reporting limits shown in parentheses.
Bolded values exceed the proposed Method 1 Standard
MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	15 Worcester Rd				
		UNKNOWN				
Well Depth (feet)		3/6/2020	7/21/2020	1/29/2021	4/26/2021	11/17/2021
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	2.1	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	2.2	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		3.1	3.1	4	4.1	4
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		3.1	3.1	8.3	4.1	4.0
Regulated Total	20	3.1	3.1	6.2	4.1	4.0

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	16 Worcester Rd				
		UNKNOWN				
Well Depth (feet)		2/5/2020	7/29/2020	1/19/2021	4/23/2021	11/4/2021
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		2.2	2.6	ND (2.0)	4.2	2.9
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		2.2	2.6	ND (2.0)	4.2	2.9
Regulated Total	20	2.2	2.6	ND (2.0)	4.2	2.9

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	17 Worcester Rd				
		UNKNOWN				
Well Depth (feet)						
Sampling Date		2/10/2020	7/21/2020	1/22/2021	4/22/2021	11/11/2021
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	20 Worcester Rd				
		3/17/2020	7/21/2020	1/20/2021	4/27/2021	11/4/2021
Well Depth (feet)						
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	1.8
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	1.8
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	1.8

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	23 Worcester Rd				
		UNKNOWN				
Well Depth (feet)						
Sampling Date		2/5/2020	7/21/2020	1/29/2021	4/27/2021	11/3/2021
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

Tighe&Bond

APPENDIX C

TABLE C-1
Public Notification Schedule
Princeton, Massachusetts
RTN 2-21072

OCTOBER 2021 SAMPLING						
Sample Location	Date Sampled	Date Data Received	Enviro Data	Final Letter Due Date	Date Final Letter Sent	MassDEP Submittal Status
26 Prospect	12/6/2021			1/30/1900		
24 Boylston	10/18/2021	10/25/2021	YES	11/24/2021	11/24/2021	Submitted with 12-2021 Quarterly Status Report
13 Gregory Hill	10/14/2021	10/25/2021	YES	11/24/2021	11/24/2021	
15 Hubbardston	10/18/2021	10/25/2021	YES	11/24/2021	11/24/2021	
23 Hubbardston	10/14/2021	10/25/2021	YES	11/24/2021	11/24/2021	
35 Hubbardston	10/18/2021	10/25/2021	YES	11/24/2021	11/24/2021	
36 Hubbardston	10/18/2021	10/25/2021	YES	11/24/2021	11/24/2021	
44 Hubbardston	10/18/2021	10/25/2021	YES	11/24/2021	11/24/2021	
2 Mountain	10/18/2021	10/25/2021	YES	11/24/2021	11/24/2021	
33 Hubbardston	10/18/2021	10/27/2021	YES	11/26/2021	12/3/2021	
15 Allen Hill	10/14/2021	10/27/2021	YES	11/26/2021	12/3/2021	
33 Allen Hill	10/18/2021	10/27/2021	YES	11/26/2021	12/3/2021	
21 Boylston	10/18/2021	10/27/2021	YES	11/26/2021	12/3/2021	
40 Boylston	10/14/2021	10/27/2021	YES	11/26/2021	12/3/2021	
6 Connor	10/14/2021	10/27/2021	YES	11/26/2021	12/3/2021	
4 Goodnow	10/14/2021	10/27/2021	YES	11/26/2021	12/3/2021	
11 Gregory Hill	10/14/2021	10/27/2021	YES	11/26/2021	12/3/2021	
14 Gregory Hill	10/14/2021	10/27/2021	YES	11/26/2021	12/3/2021	
44 Gregory Hill	10/19/2021	10/27/2021	YES	11/26/2021	12/3/2021	
7 Hubbardston	10/14/2021	10/27/2021	YES	11/26/2021	12/3/2021	
48 Hubbardston	10/18/2021	10/27/2021	YES	11/26/2021	12/3/2021	
57 Merriam	10/18/2021	10/27/2021	YES	11/26/2021	12/3/2021	
105 Merriam	10/18/2021	10/27/2021	YES	11/26/2021	12/3/2021	
33 Mountain	10/18/2021	10/27/2021	YES	11/26/2021	12/3/2021	
58 Mountain	10/18/2021	10/27/2021	YES	11/26/2021	12/3/2021	
12 Allen Hill	10/14/2021	11/2/2021	YES	12/2/2021		
10 Mountain	10/19/2021	11/2/2021	YES	12/2/2021		
20 Allen Hill	10/19/2021	11/3/2021	YES	12/3/2021		
73 Hubbardston	10/19/2021	11/3/2021	YES	12/3/2021		
81 Hubbardston	10/19/2021	11/3/2021	YES	12/3/2021		
59 Merriam	10/19/2021	11/3/2021	YES	12/3/2021		
85 Merriam	10/19/2021	11/3/2021	YES	12/3/2021		
14 Mountain	10/19/2021	11/3/2021	YES	12/3/2021		
18 Mountain	10/19/2021	11/3/2021	YES	12/3/2021		
64 Mountain	10/19/2021	11/3/2021	YES	12/3/2021		
28 Radford	10/25/2021	11/5/2021	YES	12/5/2021		
29 Radford	10/25/2021	11/5/2021	YES	12/5/2021		
19 Allen Hill	10/29/2021	11/9/2021	YES	12/9/2021		
54 Mountain	10/28/2021	11/9/2021	YES	12/9/2021		
19 Mountain	11/3/2021	11/11/2021	Yes	12/11/2021		
32 Allen Hill	11/4/2021	11/11/2021	YES	12/11/2021		
30 Boylston	11/3/2021	11/11/2021	YES	12/11/2021		
46 Hubbardston	11/3/2021	11/11/2021	YES	12/11/2021		
16 Worcester	11/4/2021	11/11/2021	YES	12/11/2021		
23 Worcester	11/3/2021	11/11/2021	YES	12/11/2021		
21 Mountain	11/3/2021	11/15/2021	YES	12/15/2021		
22 Mountain	10/29/2021	11/15/2021	YES	12/15/2021		
52 Hubbardston	11/8/2021	11/16/2021	YES	12/16/2021		
16 Prospect	11/5/2021	11/16/2021	YES	12/16/2021		
18 Prospect	11/5/2021	11/16/2021	YES	12/16/2021		
2 Radford	11/5/2021	11/16/2021	YES	12/16/2021		
18 Radford	11/5/2021	11/16/2021	YES	12/16/2021		
37 Radford	11/5/2021	11/16/2021	YES	12/16/2021		
7 Thompson	11/4/2021	11/16/2021	YES	12/16/2021		
32 Boylston	11/4/2021	11/16/2021	YES	12/16/2021		
19 Hubbardston	11/6/2021	11/16/2021	YES	12/16/2021		
70 Merriam	11/4/2021	11/16/2021	YES	12/16/2021		
11 Prospect	11/3/2021	11/16/2021	YES	12/16/2021		
17 Prospect	11/9/2021	11/16/2021	YES	12/16/2021		
41 Prospect	11/4/2021	11/16/2021	YES	12/16/2021		
7 Radford	11/3/2021	11/16/2021	YES	12/16/2021		
8 Radford	11/3/2021	11/16/2021	YES	12/16/2021		
11 Radford	11/5/2021	11/16/2021	YES	12/16/2021		
13 Radford	11/4/2021	11/16/2021	YES	12/16/2021		
23 Radford	11/5/2021	11/16/2021	YES	12/16/2021		
1 Worcester	11/4/2021	11/16/2021	YES	12/16/2021		
10 Worcester	11/5/2021	11/16/2021	YES	12/16/2021		
20 Worcester	11/3/2021	11/16/2021	YES	12/16/2021		
33 Radford	11/8/2021	11/17/2021	YES	12/17/2021		
17 Worcester	11/11/2021	11/22/2021	Yes	12/22/2021		
13 Boylston	11/11/2021	11/22/2021	Yes	12/22/2021		
17 Boylston	11/11/2021	11/22/2021	Yes	12/22/2021		
21 Gregory Hill	11/11/2021	11/22/2021	Yes	12/22/2021		
55 Merriam	11/11/2021	11/22/2021	Yes	12/22/2021		
38 Mountain	11/11/2021	11/22/2021	Yes	12/22/2021		
11 Gregory Hill	11/11/2021	11/22/2021	Yes	12/22/2021		
9 Allen Hill	11/3/2021	11/23/2021	Yes	12/23/2021		
68 Hubbardston	11/17/2021	11/29/2021	Yes	12/29/2021		
15 Worcester	11/17/2021	11/29/2021	Yes	12/29/2021		

POET SYSTEM STATUS

Locations >20 ppt	System Status	Date Installed
7 Boylston	POET INSTALLED	3/1/2020
12 Boylston	POET INSTALLED	3/20/2020
16 Boylston	POET INSTALLED	3/23/2021
14 Gregory Hill	NEEDS A POET	
15 Gregory Hill	POET INSTALLED	2/26/2020
1 Hubbardston	POET INSTALLED	2/26/2020
5 Hubbardston	POET INSTALLED	1/28/2020
7 Hubbardston	NEEDS A POET	
15 Hubbardston	POET INSTALLED	2/10/2020
35 Hubbardston	NEEDS A POET	
39 Hubbardston	POET INSTALLED	3/12/2021
42 Hubbardston	POET INSTALLED	3/2/2021
43 Hubbardston	POET INSTALLED	3/20/2020
6 Mountain	POET INSTALLED	1/28/2020
14 Mountain	NEEDS A POET	
18 Mountain	LARGE POET INSTALLED	2/10/2020
19 Mountain	LARGE POET INSTALLED	1/10/2020
20 Mountain	POET INSTALLED	2/11/2020
21 Mountain	POET INSTALLED	1/21/2020
22 Mountain	POET INSTALLED	9/3/2020
29 Mountain	POET INSTALLED	2/24/2020
30 Mountain	POET INSTALLED	2/15/2021
51 Mountain	POET INSTALLED	5/1/2020
54 Mountain	POET INSTALLED	6/2/2020
58 Mountain	POET INSTALLED	7/7/2020
64 Mountain	POET INSTALLED	2/18/2020
5 Prospect	POET INSTALLED	1/21/2020
7 Prospect	POET INSTALLED	6/23/2021
41 Prospect	EXISTING POET	NA
12 Radford	POET INSTALLED	6/12/2020
15 Radford	POET INSTALLED	10/21/2020

P-0534
December 1, 2021

Roger Sands
4 Goodnow Road
Princeton, Massachusetts 01541

Re: **Residential Well Sampling
4 Goodnow Road, Princeton**

Dear Mr. Sands:

Enclosed is a copy of the laboratory analytical results for the water sample collected from the residential well located at 4 Goodnow Road as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the residential well water sample on October 14, 2021, and Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts analyzed the sample for per- and polyfluoroalkyl substances (PFAS). Con Test is a Massachusetts-certified environmental laboratory.

Your laboratory results indicate that PFAS was not detected above laboratory reporting limits in the water sample collected on October 14, 2021. A copy of the lab report is attached to this letter.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, with any questions.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

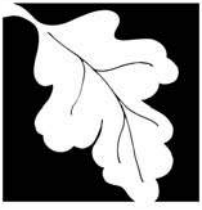
1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____
2. MCP phase of work during which the sampling will be/has been conducted:
- | | |
|--|---|
| Immediate Response Action | Phase III Feasibility Evaluation |
| Release Abatement Measure | Phase IV Remedy Implementation Plan |
| Utility-related Abatement Measure | Phase V/Remedy Operation Status |
| Phase I Initial Site Investigation | Post-Temporary Solution Operation, Maintenance and Monitoring |
| Phase II Comprehensive Site Assessment | Other _____ |
- (specify)
3. Description of property where sampling will be/has been conducted:
residential commercial industrial school/playground Other _____
(specify)
4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

 -

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	4 Goodnow Road				
		4/28/2020	10/1/2020	1/21/2021	4/20/2021	10/14/2021
Well Depth (feet)		UNKNOWN				
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

October 27, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

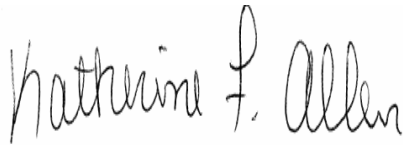
Project Location: 4 Goodnow, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1158

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/27/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1158

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 4 Goodnow, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
4 Goodnow	21J1158-01	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 4 Goodnow, Princeton, MA

Sample Description:

Work Order: 21J1158

Date Received: 10/19/2021

Field Sample #: 4 Goodnow

Sampled: 10/14/2021 12:00

Sample ID: 21J1158-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:42	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:42	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:42	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:42	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:42	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:42	BLH
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:42	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:42	BLH
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:42	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:42	BLH
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:42	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:42	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:42	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:42	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:42	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:42	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:42	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:42	BLH
Surrogates		% Recovery	Recovery Limits			Flag/Qual				
13C-PFHxA		114	70-130						10/26/21 13:42	
M3HFPO-DA		111	70-130						10/26/21 13:42	
13C-PFDA		109	70-130						10/26/21 13:42	
d5-NEtFOSAA		118	70-130						10/26/21 13:42	

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1158-01 [4 Goodnow]	B292862	268	1.00	10/22/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B292862 - EPA 537.1

Blank (B292862-BLK1)

Prepared: 10/22/21 Analyzed: 10/26/21

Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	43.8		ng/L	37.3		117	70-130			
Surrogate: M3HFPO-DA	43.4		ng/L	37.3		116	70-130			
Surrogate: 13C-PFDA	37.9		ng/L	37.3		102	70-130			
Surrogate: d5-NEtFOSAA	170		ng/L	149		114	70-130			

LCS (B292862-BS1)

Prepared: 10/22/21 Analyzed: 10/26/21

Perfluorobutanesulfonic acid (PFBS)	15.8	1.9	ng/L	16.5		95.7	70-130			
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.6	70-130			
Perfluorohexanesulfonic acid (PFHxS)	17.0	1.9	ng/L	17.0		99.8	70-130			
Perfluoroheptanoic acid (PFHpA)	16.3	1.9	ng/L	18.6		87.6	70-130			
Perfluorooctanoic acid (PFOA)	17.6	1.9	ng/L	18.6		94.7	70-130			
Perfluorooctanesulfonic acid (PFOS)	15.8	1.9	ng/L	17.2		91.4	70-130			
Perfluorononanoic acid (PFNA)	15.4	1.9	ng/L	18.6		83.1	70-130			
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130			
N-EtFOSAA	17.4	1.9	ng/L	18.6		93.6	70-130			
Perfluoroundecanoic acid (PFUnA)	17.8	1.9	ng/L	18.6		95.7	70-130			
N-MeFOSAA	17.3	1.9	ng/L	18.6		93.2	70-130			
Perfluorododecanoic acid (PFDoA)	17.7	1.9	ng/L	18.6		95.2	70-130			
Perfluorotridecanoic acid (PFTTrDA)	17.2	1.9	ng/L	18.6		92.4	70-130			
Perfluorotetradecanoic acid (PFTA)	17.4	1.9	ng/L	18.6		93.8	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.3	1.9	ng/L	18.6		93.1	70-130			
11Cl-PF3OUdS (F53B Minor)	18.0	1.9	ng/L	17.5		103	70-130			
9Cl-PF3ONS (F53B Major)	17.9	1.9	ng/L	17.3		103	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.8	1.9	ng/L	17.6		95.4	70-130			
Surrogate: 13C-PFHxA	41.0		ng/L	37.2		110	70-130			
Surrogate: M3HFPO-DA	40.4		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.9		ng/L	37.2		99.2	70-130			
Surrogate: d5-NEtFOSAA	163		ng/L	149		109	70-130			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292862 - EPA 537.1										
LCS Dup (B292862-BSD1)										
					Prepared: 10/22/21 Analyzed: 10/26/21					
Perfluorobutanesulfonic acid (PFBS)	15.5	1.9	ng/L	16.5		93.8	70-130	1.88	30	
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.7	70-130	0.343	30	
Perfluorohexanesulfonic acid (PFHxS)	17.1	1.9	ng/L	17.0		101	70-130	1.06	30	
Perfluoroheptanoic acid (PFHpA)	16.1	1.9	ng/L	18.6		86.3	70-130	1.32	30	
Perfluorooctanoic acid (PFOA)	17.1	1.9	ng/L	18.6		91.9	70-130	2.72	30	
Perfluorooctanesulfonic acid (PFOS)	15.4	1.9	ng/L	17.3		89.0	70-130	2.44	30	
Perfluorononanoic acid (PFNA)	15.3	1.9	ng/L	18.6		82.0	70-130	1.12	30	
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130	0.149	30	
N-EtFOSAA	17.1	1.9	ng/L	18.6		91.7	70-130	1.81	30	
Perfluoroundecanoic acid (PFUnA)	18.0	1.9	ng/L	18.6		96.5	70-130	1.08	30	
N-MeFOSAA	17.8	1.9	ng/L	18.6		95.6	70-130	2.69	30	
Perfluorododecanoic acid (PFDoA)	17.3	1.9	ng/L	18.6		92.9	70-130	2.31	30	
Perfluorotridecanoic acid (PFTrDA)	17.3	1.9	ng/L	18.6		92.9	70-130	0.701	30	
Perfluorotetradecanoic acid (PFTA)	17.1	1.9	ng/L	18.6		92.0	70-130	1.83	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.1	1.9	ng/L	18.6		91.9	70-130	1.05	30	
11Cl-PF3OUdS (F53B Minor)	17.8	1.9	ng/L	17.6		101	70-130	1.35	30	
9Cl-PF3ONS (F53B Major)	17.6	1.9	ng/L	17.4		101	70-130	2.07	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.7	1.9	ng/L	17.6		95.1	70-130	0.145	30	
Surrogate: 13C-PFHxA	40.7		ng/L	37.2		109	70-130			
Surrogate: M3HFPO-DA	40.5		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.7		ng/L	37.2		98.5	70-130			
Surrogate: d5-NEtFOSAA	166		ng/L	149		111	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BAA Bonita A. Abanulo

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	444	442	1.205187	1.224447		-0.5	30
Perfluorohexanoic acid (PFHxA)	A	500	493	0.7174549	0.7339039		-1.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	467	0.9422487	0.9997435		2.2	30
Perfluoroheptanoic acid (PFHpA)	A	500	429	0.5131844	0.4640475		-14.1	30
Perfluorooctanoic acid (PFOA)	A	500	551	1.018894	1.158365		10.3	30
Perfluorooctanesulfonic acid (PFOS)	A	464	478	0.9862048	1.021105		2.9	30
Perfluorononanoic acid (PFNA)	A	500	412	0.9556153	0.8088272		-17.6	30
Perfluorodecanoic acid (PFDA)	A	500	480	1.019289	1.029208		-4.1	30
N-EtFOSAA	A	500	483	0.7469728	0.748993		-3.4	30
Perfluoroundecanoic acid (PFUnA)	A	500	522	0.9840387	1.060965		4.3	30
N-MeFOSAA	A	500	507	0.9030075	0.9168343		1.3	30
Perfluorododecanoic acid (PFDoA)	A	500	500	1.153654	1.231809		0.07	30
Perfluorotridecanoic acid (PFTrDA)	A	500	453	1.231259	1.166599		-9.4	30
Perfluorotetradecanoic acid (PFTA)	A	500	467	1.033649	1.001868		-6.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	549	1.481833E-02	1.651154E-02		9.8	30
11Cl-PF3OUdS (F53B Minor)	A	472	474	1.641038	1.639428		0.3	30
9Cl-PF3ONS (F53B Major)	A	466	466	3.518141	3.5012		0.09	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	446	1.350704	1.324111		-5.5	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2080	1.205187	1.151823		-6.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2450	0.7174549	0.7276259		-2.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2280	0.9422487	0.9796582		0.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2190	0.5131844	0.4730903		-12.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2540	1.018894	1.065353		1.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2240	0.9862048	0.956855		-3.5	30
Perfluorononanoic acid (PFNA)	A	2500	2280	0.9556153	0.8939886		-8.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2470	1.019289	1.059261		-1.3	30
N-EtFOSAA	A	2500	2540	0.7469728	0.78652		1.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2690	0.9840387	1.094937		7.7	30
N-MeFOSAA	A	2500	2470	0.9030075	0.8958022		-1.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2600	1.153654	1.279111		3.9	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2620	1.231259	1.3494		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2650	1.033649	1.137421		5.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2380	1.481833E-02	1.432532E-02		-4.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.710564		4.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2460	3.518141	3.704886		5.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2350	1.350704	1.396409		-0.4	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21900	1.205187	1.212846		-1.4	30
Perfluorohexanoic acid (PFHxA)	A	25000	25800	0.7174549	0.766353		3.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	0.9992528		2.1	30
Perfluoroheptanoic acid (PFHpA)	A	25000	24100	0.5131844	0.520733		-3.6	30
Perfluorooctanoic acid (PFOA)	A	25000	25600	1.018894	1.07771		2.6	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23500	0.9862048	1.003068		1.1	30
Perfluorononanoic acid (PFNA)	A	25000	23800	0.9556153	0.9362592		-4.6	30
Perfluorodecanoic acid (PFDA)	A	25000	25900	1.019289	1.111468		3.6	30
N-EtFOSAA	A	25000	25700	0.7469728	0.768614		3.0	30
Perfluoroundecanoic acid (PFUnA)	A	25000	26700	0.9840387	1.085744		6.7	30
N-MeFOSAA	A	25000	25400	0.9030075	0.9491052		1.7	30
Perfluorododecanoic acid (PFDoA)	A	25000	26600	1.153654	1.308219		6.3	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26200	1.231259	1.349207		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	26400	1.033649	1.134729		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25400	1.481833E-02	1.529015E-02		1.7	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25100	1.641038	1.825779		6.4	30
9Cl-PF3ONS (F53B Major)	A	23300	25000	3.518141	3.980416		7.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24300	1.350704	1.445925		3.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2090	1.205187	1.159763		-5.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2400	0.7174549	0.7136453		-4.1	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2220	0.9422487	0.9521833		-2.7	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2200	0.5131844	0.4751433		-12.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2490	1.018894	1.046674		-0.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	0.9862048	0.9647938		-2.7	30
Perfluorononanoic acid (PFNA)	A	2500	2290	0.9556153	0.897298		-8.6	30
Perfluorodecanoic acid (PFDA)	A	2500	2500	1.019289	1.072089		-0.1	30
N-EtFOSAA	A	2500	2490	0.7469728	0.7685828		-0.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2700	0.9840387	1.099698		8.1	30
N-MeFOSAA	A	2500	2480	0.9030075	0.8993446		-0.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2610	1.153654	1.285782		4.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2540	1.231259	1.306517		1.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2560	1.033649	1.098145		2.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2340	1.481833E-02	1.407048E-02		-6.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.708613		4.2	30
9Cl-PF3ONS (F53B Major)	A	2330	2520	3.518141	3.798072		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2340	1.350704	1.388313		-1.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV5

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	22000	1.205187	1.219675		-0.9	30
Perfluorohexanoic acid (PFHxA)	A	25000	25700	0.7174549	0.7639828		2.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	1.001704		2.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	23800	0.5131844	0.5144887		-4.8	30
Perfluorooctanoic acid (PFOA)	A	25000	25400	1.018894	1.068279		1.7	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23600	0.9862048	1.009655		1.8	30
Perfluorononanoic acid (PFNA)	A	25000	23700	0.9556153	0.9312701		-5.1	30
Perfluorodecanoic acid (PFDA)	A	25000	26200	1.019289	1.125386		4.9	30
N-EtFOSAA	A	25000	26000	0.7469728	0.7756554		3.9	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27400	0.9840387	1.11475		9.6	30
N-MeFOSAA	A	25000	25900	0.9030075	0.9658908		3.4	30
Perfluorododecanoic acid (PFDoA)	A	25000	27400	1.153654	1.347163		9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26900	1.231259	1.383697		7.4	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27100	1.033649	1.164994		8.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	23700	1.481833E-02	1.427195E-02		-5.1	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25800	1.641038	1.874904		9.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25200	3.518141	4.012609		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24000	1.350704	1.426229		1.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

2171158

CHAIN OF CUSTODY RECORD
Minneapolis, MN 55414

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>

Tighe & Bond

Address: 120 Front Street, Worcester, MA 01610

Phone: 508-754-2201

Project Location: Princeton Private Well Sampling

Project Number: Princeton, MA

Project Manager: P-0534017

Pace Analytical Quote Name/Number: Jeff Arps/Michael Scherer

Invoice Recipient: Tighe & Bond

Sampled By: M. Scherer

7 Day 10 Day Field Filtered
 PFAS 10 Day (std) Due Date: Lab to Filter
 1 Day 3 Day Field Filtered
 2 Day 4 Day Lab to Filter

Format: PDF EXCEL
 Other:
 CLP Like Data Pkg Required: SOXHLET
 Email To: mischerer@tighebond.com
 Fax To #: NON SOXHLET

Pace Analytical Work Order #	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
4	GROUNDWATER	10/14/21	12:00	GRAB	DW	U	2				

Client Comments: Please report the 14 compound list

Relinquished by: (signature) *[Signature]* Date/Time: 10/14/21 15:00
 Received by: (signature) *[Signature]* Date/Time: 10/18 10:15
 Relinquished by: (signature) *[Signature]* Date/Time: 10/19/21 15:00
 Received by: (signature) *[Signature]* Date/Time: 10/19/21 15:50

Professional Audit Requirements	Special Requirements
MA <input checked="" type="checkbox"/> GW-1	MA MCP Required <input checked="" type="checkbox"/> MCP Certification Form Required <input type="checkbox"/> CT RCP Required <input type="checkbox"/> RCP Certification Form Required <input type="checkbox"/>
MA State DW Required <input type="checkbox"/>	MA State DW Required <input type="checkbox"/>

Project Entity: Government Municipality MWRA WRTA
 Federal 21 J School A/MA-LAP, LLC
 City Brownfield MBTA Other Chromatogram
 Other: A/MA-LAP, LLC

Comments:
 Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

ANALYSIS REQUESTED

2 Preservation Code	Course Use Only	Total Number Of:
VIALS		
GLASS		
PLASTIC		
BACTERIA		
ENCORE		

Glassware in the fridge? Y / N
 Glassware in freezer? Y / N
 Prepackaged Cooler? Y / N
 *Pace Analytical is not responsible for missing samples from prepacked coolers

1 Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

2 Preservation Codes:
 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T & B
 Received By GL Date 10/19/21 Time 1550
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

P-0534
November 30, 2021

Ken Patton
7 Hubbardston Road
Princeton, Massachusetts 01541

Re: **Residential Well Sampling
7 Hubbardston Road, Princeton**

Dear Mr. Patton:

Enclosed is a copy of the laboratory analytical results for the water sample collected from the residential well located at 7 Hubbardston Road as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the residential well water sample on October 14, 2021, and Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts analyzed the sample for per- and polyfluoroalkyl substances (PFAS). Con Test is a Massachusetts certified environmental laboratory.

A copy of the lab report is attached to this letter. Analytical results have been compared to MassDEP's drinking water Maximum Contaminant Level (MCL) of 20 nanograms per liter (ng/L), or parts per trillion (ppt), for the sum of six regulated PFAS compounds (PFAS6).

Your laboratory results indicate a PFAS6 concentration of 20.1 ng/L in the water sample collected on October 14, 2021, which is above the MassDEP MCL of 20 ng/L.

Based on the PFAS concentration detected in your well, MassDEP has determined that your water supply should not be used in the long-term without treatment. Therefore, MassDEP is requiring the Town of Princeton to provide you with bottled water temporarily while we work with you to install a point-of-entry treatment (POET) system that will remove PFAS from your well water. This system will be sampled within the first month of operation and on an annual basis thereafter.

If you would like to discuss any of this information further, please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____
2. MCP phase of work during which the sampling will be/has been conducted:
- | | |
|--|---|
| Immediate Response Action | Phase III Feasibility Evaluation |
| Release Abatement Measure | Phase IV Remedy Implementation Plan |
| Utility-related Abatement Measure | Phase V/Remedy Operation Status |
| Phase I Initial Site Investigation | Post-Temporary Solution Operation, Maintenance and Monitoring |
| Phase II Comprehensive Site Assessment | Other _____ |
- (specify)
3. Description of property where sampling will be/has been conducted:
- residential commercial industrial school/playground Other _____
- (specify)
4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

-

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	7 Hubbardston Rd					
		400'					
		12/5/2019	6/5/2020	10/1/2020	1/29/2021	4/21/2021	10/14/2021
Well Depth (feet)							
Sampling Date							
EPA 537.1 (ng/L)							
Perfluorobutanesulfonic acid (PFBS)		2.3	3.1	3.4	4.9	4.2	4.3
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		3.5	5.8	7.1	8.7	8.6	12
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		2.9	2.4	2.1	3.4	3.1	3.6
Perfluorooctanesulfonic acid (PFOS)		3.3	3.5	3.2	3.6	3.7	4.5
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		12	14.8	15.8	20.6	19.6	24.4
Regulated Total	20	9.7	11.7	12.4	15.7	15.4	20.1

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

October 27, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

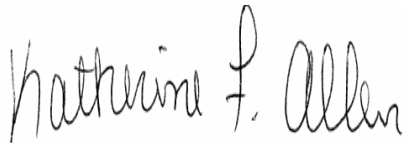
Project Location: 7 Hubbardston, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1160

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/27/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1160

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 7 Hubbardston, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
7 Hubbardston	21J1160-01	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative

Project Location: 7 Hubbardston, Princeton, MA

Sample Description:

Work Order: 21J1160

Date Received: 10/19/2021

Field Sample #: 7 Hubbardston

Sampled: 10/14/2021 12:00

Sample ID: 21J1160-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date	Date/Time	Analyst
			MA	ORSG					Prepared	Analyzed	
Perfluorobutanesulfonic acid (PFBS)	4.3	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 13:56	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 13:56	BLH
Perfluorohexanesulfonic acid (PFHxS)	12	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 13:56	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 13:56	BLH
Perfluorooctanoic acid (PFOA)	3.6	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 13:56	BLH
Perfluorooctanesulfonic acid (PFOS)	4.5	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 13:56	BLH
Perfluorononanoic acid (PFNA)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 13:56	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 13:56	BLH
N-EtFOSAA	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 13:56	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 13:56	BLH
N-MeFOSAA	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 13:56	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 13:56	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 13:56	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 13:56	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 13:56	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 13:56	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 13:56	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 13:56	BLH
Surrogates		% Recovery	Recovery Limits				Flag/Qual				
13C-PFHxA		122	70-130						10/26/21	13:56	
M3HFPO-DA		112	70-130						10/26/21	13:56	
13C-PFDA		119	70-130						10/26/21	13:56	
d5-NEtFOSAA		124	70-130						10/26/21	13:56	

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1160-01 [7 Hubbardston]	B292862	266	1.00	10/22/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B292862 - EPA 537.1

Blank (B292862-BLK1)

Prepared: 10/22/21 Analyzed: 10/26/21

Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	43.8		ng/L	37.3		117	70-130			
Surrogate: M3HFPO-DA	43.4		ng/L	37.3		116	70-130			
Surrogate: 13C-PFDA	37.9		ng/L	37.3		102	70-130			
Surrogate: d5-NEtFOSAA	170		ng/L	149		114	70-130			

LCS (B292862-BS1)

Prepared: 10/22/21 Analyzed: 10/26/21

Perfluorobutanesulfonic acid (PFBS)	15.8	1.9	ng/L	16.5		95.7	70-130			
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.6	70-130			
Perfluorohexanesulfonic acid (PFHxS)	17.0	1.9	ng/L	17.0		99.8	70-130			
Perfluoroheptanoic acid (PFHpA)	16.3	1.9	ng/L	18.6		87.6	70-130			
Perfluorooctanoic acid (PFOA)	17.6	1.9	ng/L	18.6		94.7	70-130			
Perfluorooctanesulfonic acid (PFOS)	15.8	1.9	ng/L	17.2		91.4	70-130			
Perfluorononanoic acid (PFNA)	15.4	1.9	ng/L	18.6		83.1	70-130			
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130			
N-EtFOSAA	17.4	1.9	ng/L	18.6		93.6	70-130			
Perfluoroundecanoic acid (PFUnA)	17.8	1.9	ng/L	18.6		95.7	70-130			
N-MeFOSAA	17.3	1.9	ng/L	18.6		93.2	70-130			
Perfluorododecanoic acid (PFDoA)	17.7	1.9	ng/L	18.6		95.2	70-130			
Perfluorotridecanoic acid (PFTTrDA)	17.2	1.9	ng/L	18.6		92.4	70-130			
Perfluorotetradecanoic acid (PFTA)	17.4	1.9	ng/L	18.6		93.8	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.3	1.9	ng/L	18.6		93.1	70-130			
11Cl-PF3OUdS (F53B Minor)	18.0	1.9	ng/L	17.5		103	70-130			
9Cl-PF3ONS (F53B Major)	17.9	1.9	ng/L	17.3		103	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.8	1.9	ng/L	17.6		95.4	70-130			
Surrogate: 13C-PFHxA	41.0		ng/L	37.2		110	70-130			
Surrogate: M3HFPO-DA	40.4		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.9		ng/L	37.2		99.2	70-130			
Surrogate: d5-NEtFOSAA	163		ng/L	149		109	70-130			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292862 - EPA 537.1										
LCS Dup (B292862-BSD1)										
					Prepared: 10/22/21 Analyzed: 10/26/21					
Perfluorobutanesulfonic acid (PFBS)	15.5	1.9	ng/L	16.5		93.8	70-130	1.88	30	
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.7	70-130	0.343	30	
Perfluorohexanesulfonic acid (PFHxS)	17.1	1.9	ng/L	17.0		101	70-130	1.06	30	
Perfluoroheptanoic acid (PFHpA)	16.1	1.9	ng/L	18.6		86.3	70-130	1.32	30	
Perfluorooctanoic acid (PFOA)	17.1	1.9	ng/L	18.6		91.9	70-130	2.72	30	
Perfluorooctanesulfonic acid (PFOS)	15.4	1.9	ng/L	17.3		89.0	70-130	2.44	30	
Perfluorononanoic acid (PFNA)	15.3	1.9	ng/L	18.6		82.0	70-130	1.12	30	
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130	0.149	30	
N-EtFOSAA	17.1	1.9	ng/L	18.6		91.7	70-130	1.81	30	
Perfluoroundecanoic acid (PFUnA)	18.0	1.9	ng/L	18.6		96.5	70-130	1.08	30	
N-MeFOSAA	17.8	1.9	ng/L	18.6		95.6	70-130	2.69	30	
Perfluorododecanoic acid (PFDoA)	17.3	1.9	ng/L	18.6		92.9	70-130	2.31	30	
Perfluorotridecanoic acid (PFTrDA)	17.3	1.9	ng/L	18.6		92.9	70-130	0.701	30	
Perfluorotetradecanoic acid (PFTA)	17.1	1.9	ng/L	18.6		92.0	70-130	1.83	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.1	1.9	ng/L	18.6		91.9	70-130	1.05	30	
11Cl-PF3OUdS (F53B Minor)	17.8	1.9	ng/L	17.6		101	70-130	1.35	30	
9Cl-PF3ONS (F53B Major)	17.6	1.9	ng/L	17.4		101	70-130	2.07	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.7	1.9	ng/L	17.6		95.1	70-130	0.145	30	
Surrogate: 13C-PFHxA	40.7		ng/L	37.2		109	70-130			
Surrogate: M3HFPO-DA	40.5		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.7		ng/L	37.2		98.5	70-130			
Surrogate: d5-NEtFOSAA	166		ng/L	149		111	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BAA Bonita A. Abanulo

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	444	442	1.205187	1.224447		-0.5	30
Perfluorohexanoic acid (PFHxA)	A	500	493	0.7174549	0.7339039		-1.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	467	0.9422487	0.9997435		2.2	30
Perfluoroheptanoic acid (PFHpA)	A	500	429	0.5131844	0.4640475		-14.1	30
Perfluorooctanoic acid (PFOA)	A	500	551	1.018894	1.158365		10.3	30
Perfluorooctanesulfonic acid (PFOS)	A	464	478	0.9862048	1.021105		2.9	30
Perfluorononanoic acid (PFNA)	A	500	412	0.9556153	0.8088272		-17.6	30
Perfluorodecanoic acid (PFDA)	A	500	480	1.019289	1.029208		-4.1	30
N-EtFOSAA	A	500	483	0.7469728	0.748993		-3.4	30
Perfluoroundecanoic acid (PFUnA)	A	500	522	0.9840387	1.060965		4.3	30
N-MeFOSAA	A	500	507	0.9030075	0.9168343		1.3	30
Perfluorododecanoic acid (PFDoA)	A	500	500	1.153654	1.231809		0.07	30
Perfluorotridecanoic acid (PFTrDA)	A	500	453	1.231259	1.166599		-9.4	30
Perfluorotetradecanoic acid (PFTA)	A	500	467	1.033649	1.001868		-6.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	549	1.481833E-02	1.651154E-02		9.8	30
11Cl-PF3OUdS (F53B Minor)	A	472	474	1.641038	1.639428		0.3	30
9Cl-PF3ONS (F53B Major)	A	466	466	3.518141	3.5012		0.09	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	446	1.350704	1.324111		-5.5	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2080	1.205187	1.151823		-6.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2450	0.7174549	0.7276259		-2.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2280	0.9422487	0.9796582		0.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2190	0.5131844	0.4730903		-12.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2540	1.018894	1.065353		1.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2240	0.9862048	0.956855		-3.5	30
Perfluorononanoic acid (PFNA)	A	2500	2280	0.9556153	0.8939886		-8.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2470	1.019289	1.059261		-1.3	30
N-EtFOSAA	A	2500	2540	0.7469728	0.78652		1.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2690	0.9840387	1.094937		7.7	30
N-MeFOSAA	A	2500	2470	0.9030075	0.8958022		-1.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2600	1.153654	1.279111		3.9	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2620	1.231259	1.3494		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2650	1.033649	1.137421		5.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2380	1.481833E-02	1.432532E-02		-4.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.710564		4.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2460	3.518141	3.704886		5.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2350	1.350704	1.396409		-0.4	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21900	1.205187	1.212846		-1.4	30
Perfluorohexanoic acid (PFHxA)	A	25000	25800	0.7174549	0.766353		3.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	0.9992528		2.1	30
Perfluoroheptanoic acid (PFHpA)	A	25000	24100	0.5131844	0.520733		-3.6	30
Perfluorooctanoic acid (PFOA)	A	25000	25600	1.018894	1.07771		2.6	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23500	0.9862048	1.003068		1.1	30
Perfluorononanoic acid (PFNA)	A	25000	23800	0.9556153	0.9362592		-4.6	30
Perfluorodecanoic acid (PFDA)	A	25000	25900	1.019289	1.111468		3.6	30
N-EtFOSAA	A	25000	25700	0.7469728	0.768614		3.0	30
Perfluoroundecanoic acid (PFUnA)	A	25000	26700	0.9840387	1.085744		6.7	30
N-MeFOSAA	A	25000	25400	0.9030075	0.9491052		1.7	30
Perfluorododecanoic acid (PFDoA)	A	25000	26600	1.153654	1.308219		6.3	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26200	1.231259	1.349207		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	26400	1.033649	1.134729		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25400	1.481833E-02	1.529015E-02		1.7	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25100	1.641038	1.825779		6.4	30
9Cl-PF3ONS (F53B Major)	A	23300	25000	3.518141	3.980416		7.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24300	1.350704	1.445925		3.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2090	1.205187	1.159763		-5.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2400	0.7174549	0.7136453		-4.1	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2220	0.9422487	0.9521833		-2.7	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2200	0.5131844	0.4751433		-12.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2490	1.018894	1.046674		-0.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	0.9862048	0.9647938		-2.7	30
Perfluorononanoic acid (PFNA)	A	2500	2290	0.9556153	0.897298		-8.6	30
Perfluorodecanoic acid (PFDA)	A	2500	2500	1.019289	1.072089		-0.1	30
N-EtFOSAA	A	2500	2490	0.7469728	0.7685828		-0.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2700	0.9840387	1.099698		8.1	30
N-MeFOSAA	A	2500	2480	0.9030075	0.8993446		-0.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2610	1.153654	1.285782		4.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2540	1.231259	1.306517		1.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2560	1.033649	1.098145		2.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2340	1.481833E-02	1.407048E-02		-6.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.708613		4.2	30
9Cl-PF3ONS (F53B Major)	A	2330	2520	3.518141	3.798072		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2340	1.350704	1.388313		-1.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV5

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	22000	1.205187	1.219675		-0.9	30
Perfluorohexanoic acid (PFHxA)	A	25000	25700	0.7174549	0.7639828		2.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	1.001704		2.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	23800	0.5131844	0.5144887		-4.8	30
Perfluorooctanoic acid (PFOA)	A	25000	25400	1.018894	1.068279		1.7	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23600	0.9862048	1.009655		1.8	30
Perfluorononanoic acid (PFNA)	A	25000	23700	0.9556153	0.9312701		-5.1	30
Perfluorodecanoic acid (PFDA)	A	25000	26200	1.019289	1.125386		4.9	30
N-EtFOSAA	A	25000	26000	0.7469728	0.7756554		3.9	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27400	0.9840387	1.11475		9.6	30
N-MeFOSAA	A	25000	25900	0.9030075	0.9658908		3.4	30
Perfluorododecanoic acid (PFDoA)	A	25000	27400	1.153654	1.347163		9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26900	1.231259	1.383697		7.4	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27100	1.033649	1.164994		8.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	23700	1.481833E-02	1.427195E-02		-5.1	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25800	1.641038	1.874904		9.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25200	3.518141	4.012609		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24000	1.350704	1.426229		1.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

CONTACT: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
ADDRESS: 120 Front Street, Worcester, MA 01610
PHONE: 508-754-2201
PROJECT LOCATION: Princeton Private Well Sampling, Princeton, MA
PROJECT NUMBER: P-0534017
PROJECT MANAGER: Jeff Arps/Michael Scherer
INVOICE RECIPIENT: Tighé & Bond
SAMPLED BY: M Scherer

ANALYSIS REQUESTED:

7-Day PFAS 10-Day (std)	10-Day Due Date:	Field Filtered Lab to Filter
1-Day 2-Day	3-Day 4-Day	Field Filtered Lab to Filter
Format: PDF EXCEL	Other: SOXHLET	PCB ONLY
CLP Like Data Pkg Required:	Email To: mjscherer@tighetbond.com	NON SOXHLET
Ending Date/Time: 10/19/21 1200	Matrix Code: DW	Conc. Code: U
COMP/GRAB: GRAB	VIALS: 2	GLASS: PLASTIC
Beginning Date/Time: 10/19/21	Matrix Code: DW	BACTERIA: ENCORE

Client Comments: Please report the 14 compound list

Relinquished by (signature)	Date/Time	Received by (signature)	Date/Time
<i>[Signature]</i>	10/14/21 1500	<i>[Signature]</i>	10/19/21 1000
<i>[Signature]</i>	10/19/21 1550	<i>[Signature]</i>	10/19/21 1550
<i>[Signature]</i>	10/19/21 1550	<i>[Signature]</i>	

Special Requirements:

MA MCP Required GW-1
 MCP Certification Form Required
 CT RCP Required
 RCP Certification Form Required
 MA State DWS required

Project Entity:
 Government Municipality WRTA
 Federal City School MBTA
 City: 21 J Brownfield

Other:
 Chromatogram
 AIMA-LAP, LLC

Preservation Codes:
 1 = Ice
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

Preservation Code:
 Container Use Only
 Total Number Of:
 VIALS _____
 GLASS _____
 PLASTIC _____
 BACTERIA _____
 ENCORE _____

Glassware in the fridge? Y / N
 Glassware in freezer? Y / N
 Prepackaged Cooler? Y / N
 *Pace Analytical is not responsible for missing samples from prepacked coolers

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T & B
 Received By GL Date 10/19/11 Time 1550
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

P-0534
November 29, 2021

Fred and Theresa Dowd
15 Allen Hill Road
Princeton, Massachusetts 01541

Re: **Residential Well Sampling**
15 Allen Hill Road, Princeton

Dear Mr. and Mrs. Dowd:

Enclosed is a copy of the laboratory analytical results for the groundwater samples collected from the residential well located at 15 Allen Hill Road as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the residential well water samples on October 14, 2021 and Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts analyzed the samples for per- and polyfluoroalkyl substances (PFAS). Con Test is a Massachusetts certified environmental laboratory.

Your laboratory results indicate that PFAS were not detected above laboratory reporting limits in the water samples collected on October 14, 2021. A copy of the lab report is attached to this letter.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, with any questions.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

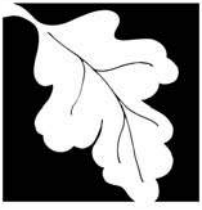
1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____
2. MCP phase of work during which the sampling will be/has been conducted:
- | | |
|--|---|
| Immediate Response Action | Phase III Feasibility Evaluation |
| Release Abatement Measure | Phase IV Remedy Implementation Plan |
| Utility-related Abatement Measure | Phase V/Remedy Operation Status |
| Phase I Initial Site Investigation | Post-Temporary Solution Operation, Maintenance and Monitoring |
| Phase II Comprehensive Site Assessment | Other _____ |
- (specify)
3. Description of property where sampling will be/has been conducted:
residential commercial industrial school/playground Other _____
(specify)
4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

	-	
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NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	15 Allen Hill Road				
		4/28/2020	10/1/2020	1/19/2021	4/23/2021	10/14/2021
Well Depth (feet)		UNKNOWN				
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.8)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

October 27, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

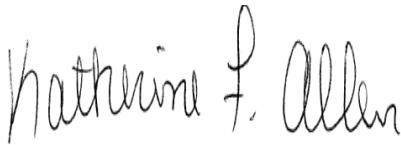
Project Location: 15 Allen Hill, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1161

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/27/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1161

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 15 Allen Hill, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
15 Allen Hill	21J1161-01	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 15 Allen Hill, Princeton, MA

Sample Description:

Work Order: 21J1161

Date Received: 10/19/2021

Field Sample #: 15 Allen Hill

Sampled: 10/14/2021 12:00

Sample ID: 21J1161-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:03	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:03	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:03	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:03	BLH
Perfluorooctanoic acid (PFOA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:03	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:03	BLH
Perfluorononanoic acid (PFNA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:03	BLH
Perfluorodecanoic acid (PFDA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:03	BLH
N-EtFOSAA	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:03	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:03	BLH
N-MeFOSAA	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:03	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:03	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:03	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:03	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:03	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:03	BLH
9Cl-PF3ONS (F53B Major)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:03	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:03	BLH
Surrogates		% Recovery		Recovery Limits		Flag/Qual				
13C-PFHxA		116		70-130					10/26/21 14:03	
M3HFPO-DA		109		70-130					10/26/21 14:03	
13C-PFDA		114		70-130					10/26/21 14:03	
d5-NEtFOSAA		118		70-130					10/26/21 14:03	

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1161-01 [15 Allen Hill]	B292862	274	1.00	10/22/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B292862 - EPA 537.1

Blank (B292862-BLK1)

Prepared: 10/22/21 Analyzed: 10/26/21

Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	43.8		ng/L	37.3		117	70-130			
Surrogate: M3HFPO-DA	43.4		ng/L	37.3		116	70-130			
Surrogate: 13C-PFDA	37.9		ng/L	37.3		102	70-130			
Surrogate: d5-NEtFOSAA	170		ng/L	149		114	70-130			

LCS (B292862-BS1)

Prepared: 10/22/21 Analyzed: 10/26/21

Perfluorobutanesulfonic acid (PFBS)	15.8	1.9	ng/L	16.5		95.7	70-130			
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.6	70-130			
Perfluorohexanesulfonic acid (PFHxS)	17.0	1.9	ng/L	17.0		99.8	70-130			
Perfluoroheptanoic acid (PFHpA)	16.3	1.9	ng/L	18.6		87.6	70-130			
Perfluorooctanoic acid (PFOA)	17.6	1.9	ng/L	18.6		94.7	70-130			
Perfluorooctanesulfonic acid (PFOS)	15.8	1.9	ng/L	17.2		91.4	70-130			
Perfluorononanoic acid (PFNA)	15.4	1.9	ng/L	18.6		83.1	70-130			
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130			
N-EtFOSAA	17.4	1.9	ng/L	18.6		93.6	70-130			
Perfluoroundecanoic acid (PFUnA)	17.8	1.9	ng/L	18.6		95.7	70-130			
N-MeFOSAA	17.3	1.9	ng/L	18.6		93.2	70-130			
Perfluorododecanoic acid (PFDoA)	17.7	1.9	ng/L	18.6		95.2	70-130			
Perfluorotridecanoic acid (PFTTrDA)	17.2	1.9	ng/L	18.6		92.4	70-130			
Perfluorotetradecanoic acid (PFTA)	17.4	1.9	ng/L	18.6		93.8	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.3	1.9	ng/L	18.6		93.1	70-130			
11Cl-PF3OUdS (F53B Minor)	18.0	1.9	ng/L	17.5		103	70-130			
9Cl-PF3ONS (F53B Major)	17.9	1.9	ng/L	17.3		103	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.8	1.9	ng/L	17.6		95.4	70-130			
Surrogate: 13C-PFHxA	41.0		ng/L	37.2		110	70-130			
Surrogate: M3HFPO-DA	40.4		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.9		ng/L	37.2		99.2	70-130			
Surrogate: d5-NEtFOSAA	163		ng/L	149		109	70-130			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292862 - EPA 537.1										
LCS Dup (B292862-BSD1)										
					Prepared: 10/22/21 Analyzed: 10/26/21					
Perfluorobutanesulfonic acid (PFBS)	15.5	1.9	ng/L	16.5		93.8	70-130	1.88	30	
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.7	70-130	0.343	30	
Perfluorohexanesulfonic acid (PFHxS)	17.1	1.9	ng/L	17.0		101	70-130	1.06	30	
Perfluoroheptanoic acid (PFHpA)	16.1	1.9	ng/L	18.6		86.3	70-130	1.32	30	
Perfluorooctanoic acid (PFOA)	17.1	1.9	ng/L	18.6		91.9	70-130	2.72	30	
Perfluorooctanesulfonic acid (PFOS)	15.4	1.9	ng/L	17.3		89.0	70-130	2.44	30	
Perfluorononanoic acid (PFNA)	15.3	1.9	ng/L	18.6		82.0	70-130	1.12	30	
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130	0.149	30	
N-EtFOSAA	17.1	1.9	ng/L	18.6		91.7	70-130	1.81	30	
Perfluoroundecanoic acid (PFUnA)	18.0	1.9	ng/L	18.6		96.5	70-130	1.08	30	
N-MeFOSAA	17.8	1.9	ng/L	18.6		95.6	70-130	2.69	30	
Perfluorododecanoic acid (PFDoA)	17.3	1.9	ng/L	18.6		92.9	70-130	2.31	30	
Perfluorotridecanoic acid (PFTrDA)	17.3	1.9	ng/L	18.6		92.9	70-130	0.701	30	
Perfluorotetradecanoic acid (PFTA)	17.1	1.9	ng/L	18.6		92.0	70-130	1.83	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.1	1.9	ng/L	18.6		91.9	70-130	1.05	30	
11Cl-PF3OUdS (F53B Minor)	17.8	1.9	ng/L	17.6		101	70-130	1.35	30	
9Cl-PF3ONS (F53B Major)	17.6	1.9	ng/L	17.4		101	70-130	2.07	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.7	1.9	ng/L	17.6		95.1	70-130	0.145	30	
Surrogate: 13C-PFHxA	40.7		ng/L	37.2		109	70-130			
Surrogate: M3HFPO-DA	40.5		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.7		ng/L	37.2		98.5	70-130			
Surrogate: d5-NEtFOSAA	166		ng/L	149		111	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BAA Bonita A. Abanulo

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	444	442	1.205187	1.224447		-0.5	30
Perfluorohexanoic acid (PFHxA)	A	500	493	0.7174549	0.7339039		-1.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	467	0.9422487	0.9997435		2.2	30
Perfluoroheptanoic acid (PFHpA)	A	500	429	0.5131844	0.4640475		-14.1	30
Perfluorooctanoic acid (PFOA)	A	500	551	1.018894	1.158365		10.3	30
Perfluorooctanesulfonic acid (PFOS)	A	464	478	0.9862048	1.021105		2.9	30
Perfluorononanoic acid (PFNA)	A	500	412	0.9556153	0.8088272		-17.6	30
Perfluorodecanoic acid (PFDA)	A	500	480	1.019289	1.029208		-4.1	30
N-EtFOSAA	A	500	483	0.7469728	0.748993		-3.4	30
Perfluoroundecanoic acid (PFUnA)	A	500	522	0.9840387	1.060965		4.3	30
N-MeFOSAA	A	500	507	0.9030075	0.9168343		1.3	30
Perfluorododecanoic acid (PFDoA)	A	500	500	1.153654	1.231809		0.07	30
Perfluorotridecanoic acid (PFTrDA)	A	500	453	1.231259	1.166599		-9.4	30
Perfluorotetradecanoic acid (PFTA)	A	500	467	1.033649	1.001868		-6.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	549	1.481833E-02	1.651154E-02		9.8	30
11Cl-PF3OUdS (F53B Minor)	A	472	474	1.641038	1.639428		0.3	30
9Cl-PF3ONS (F53B Major)	A	466	466	3.518141	3.5012		0.09	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	446	1.350704	1.324111		-5.5	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2080	1.205187	1.151823		-6.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2450	0.7174549	0.7276259		-2.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2280	0.9422487	0.9796582		0.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2190	0.5131844	0.4730903		-12.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2540	1.018894	1.065353		1.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2240	0.9862048	0.956855		-3.5	30
Perfluorononanoic acid (PFNA)	A	2500	2280	0.9556153	0.8939886		-8.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2470	1.019289	1.059261		-1.3	30
N-EtFOSAA	A	2500	2540	0.7469728	0.78652		1.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2690	0.9840387	1.094937		7.7	30
N-MeFOSAA	A	2500	2470	0.9030075	0.8958022		-1.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2600	1.153654	1.279111		3.9	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2620	1.231259	1.3494		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2650	1.033649	1.137421		5.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2380	1.481833E-02	1.432532E-02		-4.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.710564		4.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2460	3.518141	3.704886		5.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2350	1.350704	1.396409		-0.4	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21900	1.205187	1.212846		-1.4	30
Perfluorohexanoic acid (PFHxA)	A	25000	25800	0.7174549	0.766353		3.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	0.9992528		2.1	30
Perfluoroheptanoic acid (PFHpA)	A	25000	24100	0.5131844	0.520733		-3.6	30
Perfluorooctanoic acid (PFOA)	A	25000	25600	1.018894	1.07771		2.6	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23500	0.9862048	1.003068		1.1	30
Perfluorononanoic acid (PFNA)	A	25000	23800	0.9556153	0.9362592		-4.6	30
Perfluorodecanoic acid (PFDA)	A	25000	25900	1.019289	1.111468		3.6	30
N-EtFOSAA	A	25000	25700	0.7469728	0.768614		3.0	30
Perfluoroundecanoic acid (PFUnA)	A	25000	26700	0.9840387	1.085744		6.7	30
N-MeFOSAA	A	25000	25400	0.9030075	0.9491052		1.7	30
Perfluorododecanoic acid (PFDoA)	A	25000	26600	1.153654	1.308219		6.3	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26200	1.231259	1.349207		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	26400	1.033649	1.134729		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25400	1.481833E-02	1.529015E-02		1.7	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25100	1.641038	1.825779		6.4	30
9Cl-PF3ONS (F53B Major)	A	23300	25000	3.518141	3.980416		7.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24300	1.350704	1.445925		3.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2090	1.205187	1.159763		-5.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2400	0.7174549	0.7136453		-4.1	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2220	0.9422487	0.9521833		-2.7	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2200	0.5131844	0.4751433		-12.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2490	1.018894	1.046674		-0.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	0.9862048	0.9647938		-2.7	30
Perfluorononanoic acid (PFNA)	A	2500	2290	0.9556153	0.897298		-8.6	30
Perfluorodecanoic acid (PFDA)	A	2500	2500	1.019289	1.072089		-0.1	30
N-EtFOSAA	A	2500	2490	0.7469728	0.7685828		-0.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2700	0.9840387	1.099698		8.1	30
N-MeFOSAA	A	2500	2480	0.9030075	0.8993446		-0.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2610	1.153654	1.285782		4.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2540	1.231259	1.306517		1.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2560	1.033649	1.098145		2.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2340	1.481833E-02	1.407048E-02		-6.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.708613		4.2	30
9Cl-PF3ONS (F53B Major)	A	2330	2520	3.518141	3.798072		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2340	1.350704	1.388313		-1.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV5

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	22000	1.205187	1.219675		-0.9	30
Perfluorohexanoic acid (PFHxA)	A	25000	25700	0.7174549	0.7639828		2.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	1.001704		2.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	23800	0.5131844	0.5144887		-4.8	30
Perfluorooctanoic acid (PFOA)	A	25000	25400	1.018894	1.068279		1.7	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23600	0.9862048	1.009655		1.8	30
Perfluorononanoic acid (PFNA)	A	25000	23700	0.9556153	0.9312701		-5.1	30
Perfluorodecanoic acid (PFDA)	A	25000	26200	1.019289	1.125386		4.9	30
N-EtFOSAA	A	25000	26000	0.7469728	0.7756554		3.9	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27400	0.9840387	1.11475		9.6	30
N-MeFOSAA	A	25000	25900	0.9030075	0.9658908		3.4	30
Perfluorododecanoic acid (PFDoA)	A	25000	27400	1.153654	1.347163		9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26900	1.231259	1.383697		7.4	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27100	1.033649	1.164994		8.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	23700	1.481833E-02	1.427195E-02		-5.1	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25800	1.641038	1.874904		9.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25200	3.518141	4.012609		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24000	1.350704	1.426229		1.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

2151161

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
 Tighe & Bond
 170 Front Street, Worcester, MA 01610
 Phone: 508-754-2201
 Princeton Private Well Sampling
 Princeton, MA
 Project Number: P-0534017
 Project Manager: Jeff Arps/Michael Scherer
 Pace Analytical Quote Name/Number
 Invoice Recipient: Tighe & Bond
 Sampled By: M Scherer

Pace Analytical Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP / GRAB	Matrix Code	Conc. Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
	15 Allen Hill	10/19/21	1200	GRAB	DW	U					
Relinquished by: (signature)		Date/Time: 10/19/21 1505									
Received by: (signature)		Date/Time: 10/19 1015									
Relinquished by: (signature)		Date/Time: 10/19/21 1500									
Received by: (signature)		Date/Time: 10/19/21 1550									
Relinquished by: (signature)		Date/Time:									
Received by: (signature)		Date/Time:									
Relinquished by: (signature)		Date/Time:									
Received by: (signature)		Date/Time:									

Client Comments: Please report the 14 compound list

ANALYSIS REQUESTED

7-Day PFAS 10-Day (std)	10-Day Due Date:	Field Filtered Lab to Filter
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Format: PDF EXCEL
 Other: SOXHLET
 CLP Like Data Pkg Required:
 Email To: mjscherer@tighebond.com
 Fax To #:

1 MA MCP Required
 MA Certification Form Required
 CT RCP Required
 RCP Certification Form Required
 MA State DW Required

Preservation Code	Matrix Codes	Preservation Codes
Courier-Use Only Total Number Of: VIALS _____ GLASS _____ PLASTIC _____ BACTERIA _____ ENCORE _____	GW = Ground Water WW = Waste Water DW = Drinking Water A = Air S = Soil SL = Sludge SOL = Solid O = Other (please define)	I = Iced H = HCL M = Methanol N = Nitric Acid S = Sulfuric Acid B = Sodium Bisulfate X = Sodium Hydroxide T = Sodium Thiosulfate O = Other (please define)
Glassware in the fridge? Y / N	Glassware in freezer? Y / N	Prepackaged Cooler? Y / N
*Pace Analytical is not responsible for missing samples from prepacked coolers		

Special Requirements: GW-1

Project Entity: Government Federal City

Municipality: 21 J Brownfield

MWRA School MBTA WRTA Chromatogram AIHA-LAP, LLC

Other:

NECAC and AIHA-LAP, LLC Accredited

Comments: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T & B

Received By GL Date 10/19/11 Time 1550

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp 2.0
 By Blank # _____ Actual Temp _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____

Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

P-0534
November 29, 2021

Alex and Susan Ursprung
21 Boylston Ave
Princeton, Massachusetts 01541

Re: **Residential Well Sampling
21 Boylston Ave, Princeton**

Dear Mr. and Mrs. Ursprung:

Enclosed is a copy of the laboratory analytical results for the water sample collected from the residential well located at 21 Boylston Ave as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the residential well water sample on October 14, 2021, and Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts analyzed the samples for per- and polyfluoroalkyl substances (PFAS). Con Test is a Massachusetts-certified environmental laboratory.

Your laboratory results indicate that PFAS was not detected above laboratory reporting limits in the water sample collected on October 14, 2021. A copy of the lab report is attached to this letter.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, with any questions.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup





Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____
2. MCP phase of work during which the sampling will be/has been conducted:
- | | |
|--|---|
| Immediate Response Action | Phase III Feasibility Evaluation |
| Release Abatement Measure | Phase IV Remedy Implementation Plan |
| Utility-related Abatement Measure | Phase V/Remedy Operation Status |
| Phase I Initial Site Investigation | Post-Temporary Solution Operation, Maintenance and Monitoring |
| Phase II Comprehensive Site Assessment | Other _____ |
- (specify)
3. Description of property where sampling will be/has been conducted:
residential commercial industrial school/playground Other _____
(specify)
4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

	-	
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NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	21 Boylston Ave				
		2/19/2020	7/22/2020	1/19/2021	4/26/2021	10/14/2021
Well Depth (feet)		UNKNOWN				
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

October 27, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

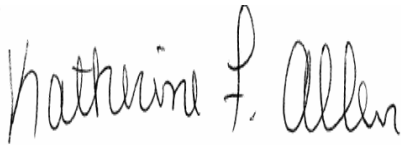
Project Location: 21 Boylston, Princeton, MA
Client Job Number:
Project Number: P-0534
Laboratory Work Order Number: 21J1155

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/27/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1155

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 21 Boylston, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
21 Boylston	21J1155-01	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 21 Boylston, Princeton, MA

Sample Description:

Work Order: 21J1155

Date Received: 10/19/2021

Field Sample #: 21 Boylston

Sampled: 10/14/2021 12:00

Sample ID: 21J1155-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:13	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:13	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:13	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:13	BLH
Perfluorooctanoic acid (PFOA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:13	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:13	BLH
Perfluorononanoic acid (PFNA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:13	BLH
Perfluorodecanoic acid (PFDA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:13	BLH
N-EtFOSAA	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:13	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:13	BLH
N-MeFOSAA	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:13	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:13	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:13	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:13	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:13	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:13	BLH
9Cl-PF3ONS (F53B Major)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:13	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:13	BLH
Surrogates		% Recovery		Recovery Limits		Flag/Qual				
13C-PFHxA		108		70-130					10/26/21 13:13	
M3HFPO-DA		105		70-130					10/26/21 13:13	
13C-PFDA		104		70-130					10/26/21 13:13	
d5-NEtFOSAA		112		70-130					10/26/21 13:13	

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1155-01 [21 Boylston]	B292862	271	1.00	10/22/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292862 - EPA 537.1										
Blank (B292862-BLK1)										
Prepared: 10/22/21 Analyzed: 10/26/21										
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	43.8		ng/L	37.3		117	70-130			
Surrogate: M3HFPO-DA	43.4		ng/L	37.3		116	70-130			
Surrogate: 13C-PFDA	37.9		ng/L	37.3		102	70-130			
Surrogate: d5-NEtFOSAA	170		ng/L	149		114	70-130			
LCS (B292862-BS1)										
Prepared: 10/22/21 Analyzed: 10/26/21										
Perfluorobutanesulfonic acid (PFBS)	15.8	1.9	ng/L	16.5		95.7	70-130			
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.6	70-130			
Perfluorohexanesulfonic acid (PFHxS)	17.0	1.9	ng/L	17.0		99.8	70-130			
Perfluoroheptanoic acid (PFHpA)	16.3	1.9	ng/L	18.6		87.6	70-130			
Perfluorooctanoic acid (PFOA)	17.6	1.9	ng/L	18.6		94.7	70-130			
Perfluorooctanesulfonic acid (PFOS)	15.8	1.9	ng/L	17.2		91.4	70-130			
Perfluorononanoic acid (PFNA)	15.4	1.9	ng/L	18.6		83.1	70-130			
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130			
N-EtFOSAA	17.4	1.9	ng/L	18.6		93.6	70-130			
Perfluoroundecanoic acid (PFUnA)	17.8	1.9	ng/L	18.6		95.7	70-130			
N-MeFOSAA	17.3	1.9	ng/L	18.6		93.2	70-130			
Perfluorododecanoic acid (PFDoA)	17.7	1.9	ng/L	18.6		95.2	70-130			
Perfluorotridecanoic acid (PFTTrDA)	17.2	1.9	ng/L	18.6		92.4	70-130			
Perfluorotetradecanoic acid (PFTA)	17.4	1.9	ng/L	18.6		93.8	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.3	1.9	ng/L	18.6		93.1	70-130			
11Cl-PF3OUdS (F53B Minor)	18.0	1.9	ng/L	17.5		103	70-130			
9Cl-PF3ONS (F53B Major)	17.9	1.9	ng/L	17.3		103	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.8	1.9	ng/L	17.6		95.4	70-130			
Surrogate: 13C-PFHxA	41.0		ng/L	37.2		110	70-130			
Surrogate: M3HFPO-DA	40.4		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.9		ng/L	37.2		99.2	70-130			
Surrogate: d5-NEtFOSAA	163		ng/L	149		109	70-130			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292862 - EPA 537.1										
LCS Dup (B292862-BSD1)										
					Prepared: 10/22/21 Analyzed: 10/26/21					
Perfluorobutanesulfonic acid (PFBS)	15.5	1.9	ng/L	16.5		93.8	70-130	1.88	30	
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.7	70-130	0.343	30	
Perfluorohexanesulfonic acid (PFHxS)	17.1	1.9	ng/L	17.0		101	70-130	1.06	30	
Perfluoroheptanoic acid (PFHpA)	16.1	1.9	ng/L	18.6		86.3	70-130	1.32	30	
Perfluorooctanoic acid (PFOA)	17.1	1.9	ng/L	18.6		91.9	70-130	2.72	30	
Perfluorooctanesulfonic acid (PFOS)	15.4	1.9	ng/L	17.3		89.0	70-130	2.44	30	
Perfluorononanoic acid (PFNA)	15.3	1.9	ng/L	18.6		82.0	70-130	1.12	30	
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130	0.149	30	
N-EtFOSAA	17.1	1.9	ng/L	18.6		91.7	70-130	1.81	30	
Perfluoroundecanoic acid (PFUnA)	18.0	1.9	ng/L	18.6		96.5	70-130	1.08	30	
N-MeFOSAA	17.8	1.9	ng/L	18.6		95.6	70-130	2.69	30	
Perfluorododecanoic acid (PFDoA)	17.3	1.9	ng/L	18.6		92.9	70-130	2.31	30	
Perfluorotridecanoic acid (PFTrDA)	17.3	1.9	ng/L	18.6		92.9	70-130	0.701	30	
Perfluorotetradecanoic acid (PFTA)	17.1	1.9	ng/L	18.6		92.0	70-130	1.83	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.1	1.9	ng/L	18.6		91.9	70-130	1.05	30	
11Cl-PF3OUdS (F53B Minor)	17.8	1.9	ng/L	17.6		101	70-130	1.35	30	
9Cl-PF3ONS (F53B Major)	17.6	1.9	ng/L	17.4		101	70-130	2.07	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.7	1.9	ng/L	17.6		95.1	70-130	0.145	30	
Surrogate: 13C-PFHxA	40.7		ng/L	37.2		109	70-130			
Surrogate: M3HFPO-DA	40.5		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.7		ng/L	37.2		98.5	70-130			
Surrogate: d5-NEtFOSAA	166		ng/L	149		111	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BAA Bonita A. Abanulo

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	444	442	1.205187	1.224447		-0.5	30
Perfluorohexanoic acid (PFHxA)	A	500	493	0.7174549	0.7339039		-1.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	467	0.9422487	0.9997435		2.2	30
Perfluoroheptanoic acid (PFHpA)	A	500	429	0.5131844	0.4640475		-14.1	30
Perfluorooctanoic acid (PFOA)	A	500	551	1.018894	1.158365		10.3	30
Perfluorooctanesulfonic acid (PFOS)	A	464	478	0.9862048	1.021105		2.9	30
Perfluorononanoic acid (PFNA)	A	500	412	0.9556153	0.8088272		-17.6	30
Perfluorodecanoic acid (PFDA)	A	500	480	1.019289	1.029208		-4.1	30
N-EtFOSAA	A	500	483	0.7469728	0.748993		-3.4	30
Perfluoroundecanoic acid (PFUnA)	A	500	522	0.9840387	1.060965		4.3	30
N-MeFOSAA	A	500	507	0.9030075	0.9168343		1.3	30
Perfluorododecanoic acid (PFDoA)	A	500	500	1.153654	1.231809		0.07	30
Perfluorotridecanoic acid (PFTrDA)	A	500	453	1.231259	1.166599		-9.4	30
Perfluorotetradecanoic acid (PFTA)	A	500	467	1.033649	1.001868		-6.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	549	1.481833E-02	1.651154E-02		9.8	30
11Cl-PF3OUdS (F53B Minor)	A	472	474	1.641038	1.639428		0.3	30
9Cl-PF3ONS (F53B Major)	A	466	466	3.518141	3.5012		0.09	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	446	1.350704	1.324111		-5.5	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2080	1.205187	1.151823		-6.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2450	0.7174549	0.7276259		-2.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2280	0.9422487	0.9796582		0.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2190	0.5131844	0.4730903		-12.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2540	1.018894	1.065353		1.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2240	0.9862048	0.956855		-3.5	30
Perfluorononanoic acid (PFNA)	A	2500	2280	0.9556153	0.8939886		-8.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2470	1.019289	1.059261		-1.3	30
N-EtFOSAA	A	2500	2540	0.7469728	0.78652		1.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2690	0.9840387	1.094937		7.7	30
N-MeFOSAA	A	2500	2470	0.9030075	0.8958022		-1.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2600	1.153654	1.279111		3.9	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2620	1.231259	1.3494		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2650	1.033649	1.137421		5.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2380	1.481833E-02	1.432532E-02		-4.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.710564		4.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2460	3.518141	3.704886		5.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2350	1.350704	1.396409		-0.4	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21900	1.205187	1.212846		-1.4	30
Perfluorohexanoic acid (PFHxA)	A	25000	25800	0.7174549	0.766353		3.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	0.9992528		2.1	30
Perfluoroheptanoic acid (PFHpA)	A	25000	24100	0.5131844	0.520733		-3.6	30
Perfluorooctanoic acid (PFOA)	A	25000	25600	1.018894	1.07771		2.6	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23500	0.9862048	1.003068		1.1	30
Perfluorononanoic acid (PFNA)	A	25000	23800	0.9556153	0.9362592		-4.6	30
Perfluorodecanoic acid (PFDA)	A	25000	25900	1.019289	1.111468		3.6	30
N-EtFOSAA	A	25000	25700	0.7469728	0.768614		3.0	30
Perfluoroundecanoic acid (PFUnA)	A	25000	26700	0.9840387	1.085744		6.7	30
N-MeFOSAA	A	25000	25400	0.9030075	0.9491052		1.7	30
Perfluorododecanoic acid (PFDoA)	A	25000	26600	1.153654	1.308219		6.3	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26200	1.231259	1.349207		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	26400	1.033649	1.134729		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25400	1.481833E-02	1.529015E-02		1.7	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25100	1.641038	1.825779		6.4	30
9Cl-PF3ONS (F53B Major)	A	23300	25000	3.518141	3.980416		7.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24300	1.350704	1.445925		3.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2090	1.205187	1.159763		-5.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2400	0.7174549	0.7136453		-4.1	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2220	0.9422487	0.9521833		-2.7	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2200	0.5131844	0.4751433		-12.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2490	1.018894	1.046674		-0.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	0.9862048	0.9647938		-2.7	30
Perfluorononanoic acid (PFNA)	A	2500	2290	0.9556153	0.897298		-8.6	30
Perfluorodecanoic acid (PFDA)	A	2500	2500	1.019289	1.072089		-0.1	30
N-EtFOSAA	A	2500	2490	0.7469728	0.7685828		-0.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2700	0.9840387	1.099698		8.1	30
N-MeFOSAA	A	2500	2480	0.9030075	0.8993446		-0.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2610	1.153654	1.285782		4.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2540	1.231259	1.306517		1.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2560	1.033649	1.098145		2.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2340	1.481833E-02	1.407048E-02		-6.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.708613		4.2	30
9Cl-PF3ONS (F53B Major)	A	2330	2520	3.518141	3.798072		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2340	1.350704	1.388313		-1.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV5

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	22000	1.205187	1.219675		-0.9	30
Perfluorohexanoic acid (PFHxA)	A	25000	25700	0.7174549	0.7639828		2.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	1.001704		2.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	23800	0.5131844	0.5144887		-4.8	30
Perfluorooctanoic acid (PFOA)	A	25000	25400	1.018894	1.068279		1.7	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23600	0.9862048	1.009655		1.8	30
Perfluorononanoic acid (PFNA)	A	25000	23700	0.9556153	0.9312701		-5.1	30
Perfluorodecanoic acid (PFDA)	A	25000	26200	1.019289	1.125386		4.9	30
N-EtFOSAA	A	25000	26000	0.7469728	0.7756554		3.9	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27400	0.9840387	1.11475		9.6	30
N-MeFOSAA	A	25000	25900	0.9030075	0.9658908		3.4	30
Perfluorododecanoic acid (PFDoA)	A	25000	27400	1.153654	1.347163		9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26900	1.231259	1.383697		7.4	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27100	1.033649	1.164994		8.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	23700	1.481833E-02	1.427195E-02		-5.1	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25800	1.641038	1.874904		9.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25200	3.518141	4.012609		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24000	1.350704	1.426229		1.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>

Tighte & Bond
 120 Front Street, Worcester, MA 01610

Phone: 508-754-2201

Project Location: Princeton Private Well Sampling
 Princeton, MA

Project Number: P-0534017

Project Manager: Jeff Arps/Michael Scherer

Pace Analytical Quote Name/Number

Invoice Recipient: Tighte & Bond

Sampled By: M. Scherer

Pace Analytical Work Order#		Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP / GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	2 Preservation Code	ANALYSIS REQUESTED									
<i>(Signature)</i>		21 Beslson	10/14/15	1400	GRAB	DW	U																
<i>(Signature)</i>																							
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Client Comments: Please report the 14 compound list

1 Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

2 Preservation Codes:
 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiocyanate
 O = Other (please define)

*Pace Analytical is not responsible for missing samples from prepacked coolers

3 Please use the following codes to indicate possible sample concentration within the Conc Code column above:
 H - High; M - Medium; L - Low; C - Clean; U - Unknown

4 MA MCP Required
 MCP Certification Form Required
 CT RCP Required
 RCP Certification Form Required
 MA State DW Required

5 Project Entity
 Government Municipality 21 J Brownfield
 Federal
 City

6 Other Chromatogram
 A/H/LAP, LLC

Format: PDF EXCEL
 Other: SOXHLET
 CLP Like Data Pkg Required:
 Email To: mjscherer@tightebond.com
 Fax To #:
 NON SOXHLET
 PCB ONLY

7 Day 10 Day Field Filtered
 PFAS 10-Day (std) Due Date: Lab to Filter
 1 Day 3 Day Field Filtered
 2 Day 4 Day Lab to Filter

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T & B

Received By ML Date 10/19/11 Time 1550

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____

Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

P-0534
November 29, 2021

Karen Cruise
33 Allen Hill Road
Princeton, Massachusetts 01541

Re: **Residential Well Sampling**
33 Allen Hill Road, Princeton

Dear Mr. and Mrs. Cruise:

Enclosed is a copy of the laboratory analytical results for the water sample collected from the residential well located at 33 Allen Hill Road as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the residential well water sample on October 18, 2021, and Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts analyzed the sample for per- and polyfluoroalkyl substances (PFAS). Con Test is a Massachusetts-certified environmental laboratory.

Your laboratory results indicate that PFAS was detected in the water sample collected on October 18, 2021 at a concentration of 2.8 ppt. A copy of the lab report is attached to this letter. Due to this detection of PFAS in your drinking water, you will continue to receive bottled water from the Town.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, with any questions.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____

2. MCP phase of work during which the sampling will be/has been conducted:

Immediate Response Action	Phase III Feasibility Evaluation
Release Abatement Measure	Phase IV Remedy Implementation Plan
Utility-related Abatement Measure	Phase V/Remedy Operation Status
Phase I Initial Site Investigation	Post-Temporary Solution Operation, Maintenance and Monitoring
Phase II Comprehensive Site Assessment	Other _____

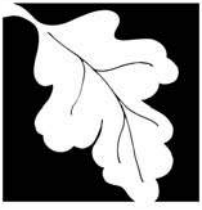
(specify)

3. Description of property where sampling will be/has been conducted:
residential commercial industrial school/playground Other _____
(specify)

4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

	-	
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NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	33 Allen Hill Rd				
		UNKNOWN				
Well Depth (feet)						
Sampling Date		10/30/2020	12/16/2020	4/20/2021	10/18/2021	
			DUPLICATE			
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.8
Perfluorooctanesulfonic acid (PFOS)		47	8	2.3	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		47	8	2.3	ND (2.0)	2.8
Regulated Total	20	47	8	2.3	ND (2.0)	2.8

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

October 27, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

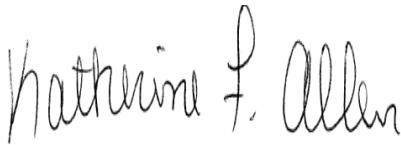
Project Location: 33 Allen Hill, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1142

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/27/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1142

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 33 Allen Hill, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
33 Allen Hill	21J1142-01	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 33 Allen Hill, Princeton, MA

Sample Description:

Work Order: 21J1142

Date Received: 10/19/2021

Field Sample #: 33 Allen Hill

Sampled: 10/18/2021 12:00

Sample ID: 21J1142-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:22	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:22	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:22	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:22	BLH
Perfluorooctanoic acid (PFOA)	2.8	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:22	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:22	BLH
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:22	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:22	BLH
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:22	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:22	BLH
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:22	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:22	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:22	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:22	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:22	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:22	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:22	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:22	BLH
Surrogates		% Recovery	Recovery Limits			Flag/Qual				
13C-PFHxA		106	70-130						10/26/21 11:22	
M3HFPO-DA		103	70-130						10/26/21 11:22	
13C-PFDA		102	70-130						10/26/21 11:22	
d5-NEtFOSAA		118	70-130						10/26/21 11:22	

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1142-01 [33 Allen Hill]	B292862	267	1.00	10/22/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292862 - EPA 537.1										
Blank (B292862-BLK1)										
Prepared: 10/22/21 Analyzed: 10/26/21										
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	43.8		ng/L	37.3		117	70-130			
Surrogate: M3HFPO-DA	43.4		ng/L	37.3		116	70-130			
Surrogate: 13C-PFDA	37.9		ng/L	37.3		102	70-130			
Surrogate: d5-NEtFOSAA	170		ng/L	149		114	70-130			
LCS (B292862-BS1)										
Prepared: 10/22/21 Analyzed: 10/26/21										
Perfluorobutanesulfonic acid (PFBS)	15.8	1.9	ng/L	16.5		95.7	70-130			
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.6	70-130			
Perfluorohexanesulfonic acid (PFHxS)	17.0	1.9	ng/L	17.0		99.8	70-130			
Perfluoroheptanoic acid (PFHpA)	16.3	1.9	ng/L	18.6		87.6	70-130			
Perfluorooctanoic acid (PFOA)	17.6	1.9	ng/L	18.6		94.7	70-130			
Perfluorooctanesulfonic acid (PFOS)	15.8	1.9	ng/L	17.2		91.4	70-130			
Perfluorononanoic acid (PFNA)	15.4	1.9	ng/L	18.6		83.1	70-130			
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130			
N-EtFOSAA	17.4	1.9	ng/L	18.6		93.6	70-130			
Perfluoroundecanoic acid (PFUnA)	17.8	1.9	ng/L	18.6		95.7	70-130			
N-MeFOSAA	17.3	1.9	ng/L	18.6		93.2	70-130			
Perfluorododecanoic acid (PFDoA)	17.7	1.9	ng/L	18.6		95.2	70-130			
Perfluorotridecanoic acid (PFTTrDA)	17.2	1.9	ng/L	18.6		92.4	70-130			
Perfluorotetradecanoic acid (PFTA)	17.4	1.9	ng/L	18.6		93.8	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.3	1.9	ng/L	18.6		93.1	70-130			
11Cl-PF3OUdS (F53B Minor)	18.0	1.9	ng/L	17.5		103	70-130			
9Cl-PF3ONS (F53B Major)	17.9	1.9	ng/L	17.3		103	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.8	1.9	ng/L	17.6		95.4	70-130			
Surrogate: 13C-PFHxA	41.0		ng/L	37.2		110	70-130			
Surrogate: M3HFPO-DA	40.4		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.9		ng/L	37.2		99.2	70-130			
Surrogate: d5-NEtFOSAA	163		ng/L	149		109	70-130			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292862 - EPA 537.1										
LCS Dup (B292862-BSD1)										
					Prepared: 10/22/21 Analyzed: 10/26/21					
Perfluorobutanesulfonic acid (PFBS)	15.5	1.9	ng/L	16.5		93.8	70-130	1.88	30	
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.7	70-130	0.343	30	
Perfluorohexanesulfonic acid (PFHxS)	17.1	1.9	ng/L	17.0		101	70-130	1.06	30	
Perfluoroheptanoic acid (PFHpA)	16.1	1.9	ng/L	18.6		86.3	70-130	1.32	30	
Perfluorooctanoic acid (PFOA)	17.1	1.9	ng/L	18.6		91.9	70-130	2.72	30	
Perfluorooctanesulfonic acid (PFOS)	15.4	1.9	ng/L	17.3		89.0	70-130	2.44	30	
Perfluorononanoic acid (PFNA)	15.3	1.9	ng/L	18.6		82.0	70-130	1.12	30	
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130	0.149	30	
N-EtFOSAA	17.1	1.9	ng/L	18.6		91.7	70-130	1.81	30	
Perfluoroundecanoic acid (PFUnA)	18.0	1.9	ng/L	18.6		96.5	70-130	1.08	30	
N-MeFOSAA	17.8	1.9	ng/L	18.6		95.6	70-130	2.69	30	
Perfluorododecanoic acid (PFDoA)	17.3	1.9	ng/L	18.6		92.9	70-130	2.31	30	
Perfluorotridecanoic acid (PFTrDA)	17.3	1.9	ng/L	18.6		92.9	70-130	0.701	30	
Perfluorotetradecanoic acid (PFTA)	17.1	1.9	ng/L	18.6		92.0	70-130	1.83	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.1	1.9	ng/L	18.6		91.9	70-130	1.05	30	
11Cl-PF3OUdS (F53B Minor)	17.8	1.9	ng/L	17.6		101	70-130	1.35	30	
9Cl-PF3ONS (F53B Major)	17.6	1.9	ng/L	17.4		101	70-130	2.07	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.7	1.9	ng/L	17.6		95.1	70-130	0.145	30	
Surrogate: 13C-PFHxA	40.7		ng/L	37.2		109	70-130			
Surrogate: M3HFPO-DA	40.5		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.7		ng/L	37.2		98.5	70-130			
Surrogate: d5-NEtFOSAA	166		ng/L	149		111	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BAA Bonita A. Abanulo

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	444	442	1.205187	1.224447		-0.5	30
Perfluorohexanoic acid (PFHxA)	A	500	493	0.7174549	0.7339039		-1.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	467	0.9422487	0.9997435		2.2	30
Perfluoroheptanoic acid (PFHpA)	A	500	429	0.5131844	0.4640475		-14.1	30
Perfluorooctanoic acid (PFOA)	A	500	551	1.018894	1.158365		10.3	30
Perfluorooctanesulfonic acid (PFOS)	A	464	478	0.9862048	1.021105		2.9	30
Perfluorononanoic acid (PFNA)	A	500	412	0.9556153	0.8088272		-17.6	30
Perfluorodecanoic acid (PFDA)	A	500	480	1.019289	1.029208		-4.1	30
N-EtFOSAA	A	500	483	0.7469728	0.748993		-3.4	30
Perfluoroundecanoic acid (PFUnA)	A	500	522	0.9840387	1.060965		4.3	30
N-MeFOSAA	A	500	507	0.9030075	0.9168343		1.3	30
Perfluorododecanoic acid (PFDoA)	A	500	500	1.153654	1.231809		0.07	30
Perfluorotridecanoic acid (PFTrDA)	A	500	453	1.231259	1.166599		-9.4	30
Perfluorotetradecanoic acid (PFTA)	A	500	467	1.033649	1.001868		-6.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	549	1.481833E-02	1.651154E-02		9.8	30
11Cl-PF3OUdS (F53B Minor)	A	472	474	1.641038	1.639428		0.3	30
9Cl-PF3ONS (F53B Major)	A	466	466	3.518141	3.5012		0.09	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	446	1.350704	1.324111		-5.5	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2080	1.205187	1.151823		-6.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2450	0.7174549	0.7276259		-2.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2280	0.9422487	0.9796582		0.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2190	0.5131844	0.4730903		-12.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2540	1.018894	1.065353		1.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2240	0.9862048	0.956855		-3.5	30
Perfluorononanoic acid (PFNA)	A	2500	2280	0.9556153	0.8939886		-8.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2470	1.019289	1.059261		-1.3	30
N-EtFOSAA	A	2500	2540	0.7469728	0.78652		1.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2690	0.9840387	1.094937		7.7	30
N-MeFOSAA	A	2500	2470	0.9030075	0.8958022		-1.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2600	1.153654	1.279111		3.9	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2620	1.231259	1.3494		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2650	1.033649	1.137421		5.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2380	1.481833E-02	1.432532E-02		-4.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.710564		4.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2460	3.518141	3.704886		5.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2350	1.350704	1.396409		-0.4	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21900	1.205187	1.212846		-1.4	30
Perfluorohexanoic acid (PFHxA)	A	25000	25800	0.7174549	0.766353		3.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	0.9992528		2.1	30
Perfluoroheptanoic acid (PFHpA)	A	25000	24100	0.5131844	0.520733		-3.6	30
Perfluorooctanoic acid (PFOA)	A	25000	25600	1.018894	1.07771		2.6	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23500	0.9862048	1.003068		1.1	30
Perfluorononanoic acid (PFNA)	A	25000	23800	0.9556153	0.9362592		-4.6	30
Perfluorodecanoic acid (PFDA)	A	25000	25900	1.019289	1.111468		3.6	30
N-EtFOSAA	A	25000	25700	0.7469728	0.768614		3.0	30
Perfluoroundecanoic acid (PFUnA)	A	25000	26700	0.9840387	1.085744		6.7	30
N-MeFOSAA	A	25000	25400	0.9030075	0.9491052		1.7	30
Perfluorododecanoic acid (PFDoA)	A	25000	26600	1.153654	1.308219		6.3	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26200	1.231259	1.349207		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	26400	1.033649	1.134729		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25400	1.481833E-02	1.529015E-02		1.7	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25100	1.641038	1.825779		6.4	30
9Cl-PF3ONS (F53B Major)	A	23300	25000	3.518141	3.980416		7.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24300	1.350704	1.445925		3.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2090	1.205187	1.159763		-5.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2400	0.7174549	0.7136453		-4.1	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2220	0.9422487	0.9521833		-2.7	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2200	0.5131844	0.4751433		-12.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2490	1.018894	1.046674		-0.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	0.9862048	0.9647938		-2.7	30
Perfluorononanoic acid (PFNA)	A	2500	2290	0.9556153	0.897298		-8.6	30
Perfluorodecanoic acid (PFDA)	A	2500	2500	1.019289	1.072089		-0.1	30
N-EtFOSAA	A	2500	2490	0.7469728	0.7685828		-0.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2700	0.9840387	1.099698		8.1	30
N-MeFOSAA	A	2500	2480	0.9030075	0.8993446		-0.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2610	1.153654	1.285782		4.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2540	1.231259	1.306517		1.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2560	1.033649	1.098145		2.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2340	1.481833E-02	1.407048E-02		-6.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.708613		4.2	30
9Cl-PF3ONS (F53B Major)	A	2330	2520	3.518141	3.798072		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2340	1.350704	1.388313		-1.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV5

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	22000	1.205187	1.219675		-0.9	30
Perfluorohexanoic acid (PFHxA)	A	25000	25700	0.7174549	0.7639828		2.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	1.001704		2.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	23800	0.5131844	0.5144887		-4.8	30
Perfluorooctanoic acid (PFOA)	A	25000	25400	1.018894	1.068279		1.7	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23600	0.9862048	1.009655		1.8	30
Perfluorononanoic acid (PFNA)	A	25000	23700	0.9556153	0.9312701		-5.1	30
Perfluorodecanoic acid (PFDA)	A	25000	26200	1.019289	1.125386		4.9	30
N-EtFOSAA	A	25000	26000	0.7469728	0.7756554		3.9	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27400	0.9840387	1.11475		9.6	30
N-MeFOSAA	A	25000	25900	0.9030075	0.9658908		3.4	30
Perfluorododecanoic acid (PFDoA)	A	25000	27400	1.153654	1.347163		9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26900	1.231259	1.383697		7.4	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27100	1.033649	1.164994		8.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	23700	1.481833E-02	1.427195E-02		-5.1	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25800	1.641038	1.874904		9.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25200	3.518141	4.012609		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24000	1.350704	1.426229		1.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
Tighe & Bond
Address: 120 Front Street, Worcester, MA 01610
Phone: 508-754-2201
Princeton Private Well Sampling
Princeton, MA
Project Number: P-0534017
Project Manager: Jeff Arps/Michael Scherer
Pace Analytical Quote Name/Number
Invoice Recipient: Tighe & Bond
Sampled By: M Scherer

7-Day 10-Day Field Filtered
 PFAS 10-Day (std) Due Date:
 1-Day 3-Day Field Filtered
 2-Day 4-Day Lab to Filter
 Format: PDF EXCEL
 Other: SOXHLET
 CLP Like Data Pkg Required:
 Email To: mischerer@tighebond.com
 Fax To #:

ANALYSIS REQUESTED

Preservation Code	Courier Use Only Total Number Of:
VIALS	
GLASS	
PLASTIC	
BACTERIA	
ENCORE	
Glassware in the fridge? Y / N	
Glassware in freezer? Y / N	
Prepackaged Cooler? Y / N	
*Pace Analytical is not responsible for missing samples from prepacked coolers	
Matrix Codes: GW = Ground Water WW = Waste Water DW = Drinking Water A = Air S = Soil SL = Sludge SOL = Solid O = Other (please define)	

Client Comments: Please report the 14 compound list

* Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

MA MCP Required
 MCP Certification Form Required
 CT RCP Required
 RCP Certification Form Required
 MA State DW Required
 MA State DW Required
 PMSID #

Special Requirements
 MA MCP Required
 MCP Certification Form Required
 CT RCP Required
 RCP Certification Form Required
 MA State DW Required
 MA State DW Required
 PMSID #

Project Entity
 Government Municipality MWRA WRTA Other
 Federal 21 J School AHA-LAP, LLC
 City Brownfield MBTA

Received by: (signature) *[Signature]* Date/Time: 10/18/21 1500
 Relinquished by: (signature) *[Signature]* Date/Time: 10/19 10 05
 Received by: (signature) *[Signature]* Date/Time: 10/19/21 1550
 Relinquished by: (signature) *[Signature]* Date/Time: 10/19/21 1550

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T E B

Received By GL Date 10/19/21 Time 1550

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp 2.0
By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client T Analysis T Sampler Name T
Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? _____

Are there Rushes? F Who was notified? _____

Are there Short Holds? F Who was notified? _____

Is there enough Volume? T

Is there Headspace where applicable? NA MS/MSD? F

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? F On COC? F

Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

P-0534
November 30, 2021

Justin and Jessica Hebb
48 Hubbardston Road
Princeton, Massachusetts 01541

Re: **Residential Well Sampling**
48 Hubbardston Road, Princeton

Dear Mr. and Mrs. Hebb:

Enclosed is a copy of the laboratory analytical results for the water samples collected from the residential well located at 48 Hubbardston Road as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the residential well water samples on October 18, 2021, and Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts analyzed the sample for per- and polyfluoroalkyl substances (PFAS). Con Test is a Massachusetts certified environmental laboratory.

Your laboratory results indicate that PFAS was detected in the water samples collected on October 18, 2021 at a concentration of 2.0 ppt. Copies of the lab reports are attached to this letter. Because of this detection, you are being provided with bottled water by the Town.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, with any questions.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

- 1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
- 2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
- 3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____

2. MCP phase of work during which the sampling will be/has been conducted:

Immediate Response Action	Phase III Feasibility Evaluation
Release Abatement Measure	Phase IV Remedy Implementation Plan
Utility-related Abatement Measure	Phase V/Remedy Operation Status
Phase I Initial Site Investigation	Post-Temporary Solution Operation, Maintenance and Monitoring
Phase II Comprehensive Site Assessment	Other _____

(specify)

3. Description of property where sampling will be/has been conducted:
residential commercial industrial school/playground Other _____
(specify)

4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

-

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	48 Hubbardston Rd					
		2/12/2020	7/23/2020	1/22/2021	3/3/2021	4/19/2021	10/18/2021
<i>EPA 537.1 (ng/L)</i>							
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	2.4	ND (2.0)	ND (2.0)	3.0
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.0
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	2.4	ND (2.0)	ND (2.0)	5.0
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.0

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

October 27, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

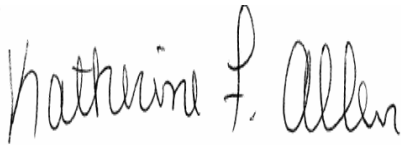
Project Location: 48 Hubbardston, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1151

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/27/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1151

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 48 Hubbardston, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
48 Hubbardston	21J1151-01	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 48 Hubbardston, Princeton, MA

Sample Description:

Work Order: 21J1151

Date Received: 10/19/2021

Field Sample #: 48 Hubbardston

Sampled: 10/18/2021 12:00

Sample ID: 21J1151-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date	Date/Time	Analyst
		RL	MA ORSG					Prepared	Analyzed	
Perfluorobutanesulfonic acid (PFBS)	3.0	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:59	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:59	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:59	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:59	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:59	BLH
Perfluorooctanesulfonic acid (PFOS)	2.0	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:59	BLH
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:59	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:59	BLH
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:59	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:59	BLH
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:59	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:59	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:59	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:59	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:59	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:59	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:59	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:59	BLH
Surrogates		% Recovery		Recovery Limits		Flag/Qual				
13C-PFHxA		111		70-130					10/26/21 12:59	
M3HFPO-DA		106		70-130					10/26/21 12:59	
13C-PFDA		112		70-130					10/26/21 12:59	
d5-NEtFOSAA		120		70-130					10/26/21 12:59	

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1151-01 [48 Hubbardston]	B292862	270	1.00	10/22/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B292862 - EPA 537.1

Blank (B292862-BLK1)

Prepared: 10/22/21 Analyzed: 10/26/21

Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	43.8		ng/L	37.3		117	70-130			
Surrogate: M3HFPO-DA	43.4		ng/L	37.3		116	70-130			
Surrogate: 13C-PFDA	37.9		ng/L	37.3		102	70-130			
Surrogate: d5-NEtFOSAA	170		ng/L	149		114	70-130			

LCS (B292862-BS1)

Prepared: 10/22/21 Analyzed: 10/26/21

Perfluorobutanesulfonic acid (PFBS)	15.8	1.9	ng/L	16.5		95.7	70-130			
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.6	70-130			
Perfluorohexanesulfonic acid (PFHxS)	17.0	1.9	ng/L	17.0		99.8	70-130			
Perfluoroheptanoic acid (PFHpA)	16.3	1.9	ng/L	18.6		87.6	70-130			
Perfluorooctanoic acid (PFOA)	17.6	1.9	ng/L	18.6		94.7	70-130			
Perfluorooctanesulfonic acid (PFOS)	15.8	1.9	ng/L	17.2		91.4	70-130			
Perfluorononanoic acid (PFNA)	15.4	1.9	ng/L	18.6		83.1	70-130			
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130			
N-EtFOSAA	17.4	1.9	ng/L	18.6		93.6	70-130			
Perfluoroundecanoic acid (PFUnA)	17.8	1.9	ng/L	18.6		95.7	70-130			
N-MeFOSAA	17.3	1.9	ng/L	18.6		93.2	70-130			
Perfluorododecanoic acid (PFDoA)	17.7	1.9	ng/L	18.6		95.2	70-130			
Perfluorotridecanoic acid (PFTTrDA)	17.2	1.9	ng/L	18.6		92.4	70-130			
Perfluorotetradecanoic acid (PFTA)	17.4	1.9	ng/L	18.6		93.8	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.3	1.9	ng/L	18.6		93.1	70-130			
11Cl-PF3OUdS (F53B Minor)	18.0	1.9	ng/L	17.5		103	70-130			
9Cl-PF3ONS (F53B Major)	17.9	1.9	ng/L	17.3		103	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.8	1.9	ng/L	17.6		95.4	70-130			
Surrogate: 13C-PFHxA	41.0		ng/L	37.2		110	70-130			
Surrogate: M3HFPO-DA	40.4		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.9		ng/L	37.2		99.2	70-130			
Surrogate: d5-NEtFOSAA	163		ng/L	149		109	70-130			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292862 - EPA 537.1										
LCS Dup (B292862-BSD1)										
					Prepared: 10/22/21 Analyzed: 10/26/21					
Perfluorobutanesulfonic acid (PFBS)	15.5	1.9	ng/L	16.5		93.8	70-130	1.88	30	
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.7	70-130	0.343	30	
Perfluorohexanesulfonic acid (PFHxS)	17.1	1.9	ng/L	17.0		101	70-130	1.06	30	
Perfluoroheptanoic acid (PFHpA)	16.1	1.9	ng/L	18.6		86.3	70-130	1.32	30	
Perfluorooctanoic acid (PFOA)	17.1	1.9	ng/L	18.6		91.9	70-130	2.72	30	
Perfluorooctanesulfonic acid (PFOS)	15.4	1.9	ng/L	17.3		89.0	70-130	2.44	30	
Perfluorononanoic acid (PFNA)	15.3	1.9	ng/L	18.6		82.0	70-130	1.12	30	
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130	0.149	30	
N-EtFOSAA	17.1	1.9	ng/L	18.6		91.7	70-130	1.81	30	
Perfluoroundecanoic acid (PFUnA)	18.0	1.9	ng/L	18.6		96.5	70-130	1.08	30	
N-MeFOSAA	17.8	1.9	ng/L	18.6		95.6	70-130	2.69	30	
Perfluorododecanoic acid (PFDoA)	17.3	1.9	ng/L	18.6		92.9	70-130	2.31	30	
Perfluorotridecanoic acid (PFTrDA)	17.3	1.9	ng/L	18.6		92.9	70-130	0.701	30	
Perfluorotetradecanoic acid (PFTA)	17.1	1.9	ng/L	18.6		92.0	70-130	1.83	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.1	1.9	ng/L	18.6		91.9	70-130	1.05	30	
11Cl-PF3OUdS (F53B Minor)	17.8	1.9	ng/L	17.6		101	70-130	1.35	30	
9Cl-PF3ONS (F53B Major)	17.6	1.9	ng/L	17.4		101	70-130	2.07	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.7	1.9	ng/L	17.6		95.1	70-130	0.145	30	
Surrogate: 13C-PFHxA	40.7		ng/L	37.2		109	70-130			
Surrogate: M3HFPO-DA	40.5		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.7		ng/L	37.2		98.5	70-130			
Surrogate: d5-NEtFOSAA	166		ng/L	149		111	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BAA Bonita A. Abanulo

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	444	442	1.205187	1.224447		-0.5	30
Perfluorohexanoic acid (PFHxA)	A	500	493	0.7174549	0.7339039		-1.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	467	0.9422487	0.9997435		2.2	30
Perfluoroheptanoic acid (PFHpA)	A	500	429	0.5131844	0.4640475		-14.1	30
Perfluorooctanoic acid (PFOA)	A	500	551	1.018894	1.158365		10.3	30
Perfluorooctanesulfonic acid (PFOS)	A	464	478	0.9862048	1.021105		2.9	30
Perfluorononanoic acid (PFNA)	A	500	412	0.9556153	0.8088272		-17.6	30
Perfluorodecanoic acid (PFDA)	A	500	480	1.019289	1.029208		-4.1	30
N-EtFOSAA	A	500	483	0.7469728	0.748993		-3.4	30
Perfluoroundecanoic acid (PFUnA)	A	500	522	0.9840387	1.060965		4.3	30
N-MeFOSAA	A	500	507	0.9030075	0.9168343		1.3	30
Perfluorododecanoic acid (PFDoA)	A	500	500	1.153654	1.231809		0.07	30
Perfluorotridecanoic acid (PFTrDA)	A	500	453	1.231259	1.166599		-9.4	30
Perfluorotetradecanoic acid (PFTA)	A	500	467	1.033649	1.001868		-6.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	549	1.481833E-02	1.651154E-02		9.8	30
11Cl-PF3OUdS (F53B Minor)	A	472	474	1.641038	1.639428		0.3	30
9Cl-PF3ONS (F53B Major)	A	466	466	3.518141	3.5012		0.09	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	446	1.350704	1.324111		-5.5	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2080	1.205187	1.151823		-6.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2450	0.7174549	0.7276259		-2.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2280	0.9422487	0.9796582		0.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2190	0.5131844	0.4730903		-12.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2540	1.018894	1.065353		1.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2240	0.9862048	0.956855		-3.5	30
Perfluorononanoic acid (PFNA)	A	2500	2280	0.9556153	0.8939886		-8.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2470	1.019289	1.059261		-1.3	30
N-EtFOSAA	A	2500	2540	0.7469728	0.78652		1.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2690	0.9840387	1.094937		7.7	30
N-MeFOSAA	A	2500	2470	0.9030075	0.8958022		-1.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2600	1.153654	1.279111		3.9	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2620	1.231259	1.3494		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2650	1.033649	1.137421		5.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2380	1.481833E-02	1.432532E-02		-4.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.710564		4.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2460	3.518141	3.704886		5.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2350	1.350704	1.396409		-0.4	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21900	1.205187	1.212846		-1.4	30
Perfluorohexanoic acid (PFHxA)	A	25000	25800	0.7174549	0.766353		3.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	0.9992528		2.1	30
Perfluoroheptanoic acid (PFHpA)	A	25000	24100	0.5131844	0.520733		-3.6	30
Perfluorooctanoic acid (PFOA)	A	25000	25600	1.018894	1.07771		2.6	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23500	0.9862048	1.003068		1.1	30
Perfluorononanoic acid (PFNA)	A	25000	23800	0.9556153	0.9362592		-4.6	30
Perfluorodecanoic acid (PFDA)	A	25000	25900	1.019289	1.111468		3.6	30
N-EtFOSAA	A	25000	25700	0.7469728	0.768614		3.0	30
Perfluoroundecanoic acid (PFUnA)	A	25000	26700	0.9840387	1.085744		6.7	30
N-MeFOSAA	A	25000	25400	0.9030075	0.9491052		1.7	30
Perfluorododecanoic acid (PFDoA)	A	25000	26600	1.153654	1.308219		6.3	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26200	1.231259	1.349207		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	26400	1.033649	1.134729		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25400	1.481833E-02	1.529015E-02		1.7	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25100	1.641038	1.825779		6.4	30
9Cl-PF3ONS (F53B Major)	A	23300	25000	3.518141	3.980416		7.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24300	1.350704	1.445925		3.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2090	1.205187	1.159763		-5.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2400	0.7174549	0.7136453		-4.1	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2220	0.9422487	0.9521833		-2.7	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2200	0.5131844	0.4751433		-12.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2490	1.018894	1.046674		-0.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	0.9862048	0.9647938		-2.7	30
Perfluorononanoic acid (PFNA)	A	2500	2290	0.9556153	0.897298		-8.6	30
Perfluorodecanoic acid (PFDA)	A	2500	2500	1.019289	1.072089		-0.1	30
N-EtFOSAA	A	2500	2490	0.7469728	0.7685828		-0.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2700	0.9840387	1.099698		8.1	30
N-MeFOSAA	A	2500	2480	0.9030075	0.8993446		-0.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2610	1.153654	1.285782		4.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2540	1.231259	1.306517		1.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2560	1.033649	1.098145		2.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2340	1.481833E-02	1.407048E-02		-6.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.708613		4.2	30
9Cl-PF3ONS (F53B Major)	A	2330	2520	3.518141	3.798072		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2340	1.350704	1.388313		-1.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV5

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	22000	1.205187	1.219675		-0.9	30
Perfluorohexanoic acid (PFHxA)	A	25000	25700	0.7174549	0.7639828		2.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	1.001704		2.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	23800	0.5131844	0.5144887		-4.8	30
Perfluorooctanoic acid (PFOA)	A	25000	25400	1.018894	1.068279		1.7	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23600	0.9862048	1.009655		1.8	30
Perfluorononanoic acid (PFNA)	A	25000	23700	0.9556153	0.9312701		-5.1	30
Perfluorodecanoic acid (PFDA)	A	25000	26200	1.019289	1.125386		4.9	30
N-EtFOSAA	A	25000	26000	0.7469728	0.7756554		3.9	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27400	0.9840387	1.11475		9.6	30
N-MeFOSAA	A	25000	25900	0.9030075	0.9658908		3.4	30
Perfluorododecanoic acid (PFDoA)	A	25000	27400	1.153654	1.347163		9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26900	1.231259	1.383697		7.4	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27100	1.033649	1.164994		8.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	23700	1.481833E-02	1.427195E-02		-5.1	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25800	1.641038	1.874904		9.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25200	3.518141	4.012609		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24000	1.350704	1.426229		1.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
Tighte & Bond
120 Front Street, Worcester, MA 01610
Phone: 508-754-2201
Project Name: Princeton Private Well Sampling
Project Location: Princeton, MA
Project Number: P-0534017
Project Manager: Jeff Arps/Michael Scherer
Pace Analytical Quote Name/Number
Invoice Recipient: Tighte & Bond
Sampled By: M Scherer

Pace Analytical Work Order #	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
	48 HUBBARDSTON	10/18/21	12:00	GRAB	DW	U	2				

Format: PDF EXCEL
Other:
CLP Like Data Pkg Required:
Email To: mjscherer@tightebond.com
Fax To #:

ANALYSIS REQUESTED

Preservation Code	Counters Use Only	Total Number Of:
VIALS		
GLASS		
PLASTIC		
BACTERIA		
ENCORE		
Glassware in the fridge? Y / N		
Glassware in freezer? Y / N		
Prepackaged Cooler? Y / N		
*Pace Analytical is not responsible for missing samples from prepacked coolers		
1 Matrix Codes: GW = Ground Water WW = Waste Water DW = Drinking Water A = Air S = Soil SL = Sludge SOL = Solid O = Other (please define)		
2 Preservation Codes: I = Iced H = HCL M = Methanol N = Nitric Acid S = Sulfuric Acid B = Sodium Bisulfate X = Sodium Hydroxide T = Sodium Thiosulfate O = Other (please define)		

Client Comments: Please report the 14 compound list

Relinquished by: (signature)	Date/Time:
<i>[Signature]</i>	10/18/21 15:00
<i>[Signature]</i>	10/15
<i>[Signature]</i>	10/19/24 15:50
<i>[Signature]</i>	2.0 10/19/21 15:50
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Special Requirements

MA, MCP Required GW-1
MCP Certification Form Required
CT RCP Required
RCP Certification Form Required
MA State DW Required MA State DW #

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Other Chromatogram
 AHA-LAP, LLC

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client TIB
 Received By ML Date 10/19/21 Time 1550
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	2	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear
DI-		Other Glass		Other Plastic		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Unused Media

Vials	#	Containers	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear
DI-		Other Plastic		Other Glass		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Comments:

P-0534
November 24, 2021

Justin Hebb
2 Mountain Road
Princeton, Massachusetts 01541

Re: **Residential Well Sampling
2 Mountain Rd, Princeton**

Dear Mr. Hebb:

Enclosed is a copy of the laboratory analytical results for the water sample collected from the residential well located at 2 Mountain Road as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the residential well water sample on October 18, 2021, and Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts analyzed the sample for per- and polyfluoroalkyl substances (PFAS). Con Test is a Massachusetts-certified environmental laboratory.

Analytical results have been compared to MassDEP's drinking water Maximum Contaminant Level (MCL) of 20 nanograms per liter (ng/L), or parts per trillion (ppt), for the sum of six specific PFAS compounds (PFAS6).

Your laboratory results indicate that the PFAS6 concentration was reported at 5.2 ppt in the water sample collected on October 18, 2021, which is below the MassDEP MCL of 20 ppt. Because of this detection, you are receiving bottled water from the Town.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, with any questions.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup





Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

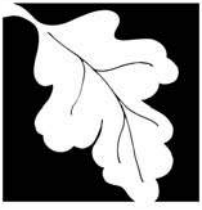
1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____
2. MCP phase of work during which the sampling will be/has been conducted:
- | | |
|--|---|
| Immediate Response Action | Phase III Feasibility Evaluation |
| Release Abatement Measure | Phase IV Remedy Implementation Plan |
| Utility-related Abatement Measure | Phase V/Remedy Operation Status |
| Phase I Initial Site Investigation | Post-Temporary Solution Operation, Maintenance and Monitoring |
| Phase II Comprehensive Site Assessment | Other _____ |
- (specify)
3. Description of property where sampling will be/has been conducted:
residential commercial industrial school/playground Other _____
(specify)
4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

-

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	2 Mountain Rd					
		UNKNOWN					
		1/7/2020	6/5/2020	10/7/2020	1/22/2021	4/26/2021	10/18/2021
Well Depth (feet)							
Sampling Date							
EPA 537.1 (ng/L)							
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	2	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	2.1	ND (2.0)	3.2	3.8	3.2
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	2.1	ND (2.0)	5.2	3.8	5.2
Regulated Total	20	ND (2.0)	2.1	ND (2.0)	3.2	3.8	5.2

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

October 25, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

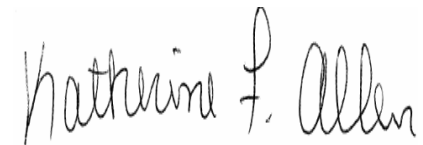
Project Location: 2 Mountain, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1141

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/25/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1141

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 2 Mountain, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
2 Mountain	21J1141-01	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative

Project Location: 2 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1141

Date Received: 10/19/2021

Field Sample #: 2 Mountain

Sampled: 10/18/2021 12:00

Sample ID: 21J1141-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:22	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:22	BLH
Perfluorohexanesulfonic acid (PFHxS)	3.2	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:22	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:22	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:22	BLH
Perfluorooctanesulfonic acid (PFOS)	2.0	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:22	BLH
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:22	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:22	BLH
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:22	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:22	BLH
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:22	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:22	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:22	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:22	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:22	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:22	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:22	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:22	BLH
Surrogates		% Recovery		Recovery Limits		Flag/Qual				
13C-PFHxA		79.6		70-130					10/21/21 22:22	
M3HFPO-DA		75.3		70-130					10/21/21 22:22	
13C-PFDA		90.5		70-130					10/21/21 22:22	
d5-NEtFOSAA		82.9		70-130					10/21/21 22:22	

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1141-01 [2 Mountain]	B292840	258	1.00	10/20/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292840 - EPA 537.1										
Blank (B292840-BLK1)										
Prepared: 10/20/21 Analyzed: 10/21/21										
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	36.4		ng/L	38.8		93.9	70-130			
Surrogate: M3HFPO-DA	37.1		ng/L	38.8		95.5	70-130			
Surrogate: 13C-PFDA	36.5		ng/L	38.8		94.0	70-130			
Surrogate: d5-NEtFOSAA	140		ng/L	155		90.1	70-130			
LCS (B292840-BS1)										
Prepared: 10/20/21 Analyzed: 10/21/21										
Perfluorobutanesulfonic acid (PFBS)	7.49	1.9	ng/L	8.53		87.7	70-130			
Perfluorohexanoic acid (PFHxA)	8.83	1.9	ng/L	9.62		91.8	70-130			
Perfluorohexanesulfonic acid (PFHxS)	8.40	1.9	ng/L	8.79		95.6	70-130			
Perfluoroheptanoic acid (PFHpA)	8.53	1.9	ng/L	9.62		88.7	70-130			
Perfluorooctanoic acid (PFOA)	8.74	1.9	ng/L	9.62		90.9	70-130			
Perfluorooctanesulfonic acid (PFOS)	8.36	1.9	ng/L	8.93		93.6	70-130			
Perfluorononanoic acid (PFNA)	8.50	1.9	ng/L	9.62		88.3	70-130			
Perfluorodecanoic acid (PFDA)	9.36	1.9	ng/L	9.62		97.3	70-130			
N-EtFOSAA	8.02	1.9	ng/L	9.62		83.4	70-130			
Perfluoroundecanoic acid (PFUnA)	9.18	1.9	ng/L	9.62		95.5	70-130			
N-MeFOSAA	7.98	1.9	ng/L	9.62		83.0	70-130			
Perfluorododecanoic acid (PFDoA)	8.78	1.9	ng/L	9.62		91.3	70-130			
Perfluorotridecanoic acid (PFTTrDA)	8.24	1.9	ng/L	9.62		85.6	70-130			
Perfluorotetradecanoic acid (PFTA)	7.81	1.9	ng/L	9.62		81.2	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	8.51	1.9	ng/L	9.62		88.5	70-130			
11Cl-PF3OUdS (F53B Minor)	7.76	1.9	ng/L	9.07		85.6	70-130			
9Cl-PF3ONS (F53B Major)	7.85	1.9	ng/L	8.98		87.5	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	8.22	1.9	ng/L	9.09		90.4	70-130			
Surrogate: 13C-PFHxA	37.6		ng/L	38.5		97.8	70-130			
Surrogate: M3HFPO-DA	38.3		ng/L	38.5		99.7	70-130			
Surrogate: 13C-PFDA	38.2		ng/L	38.5		99.2	70-130			
Surrogate: d5-NEtFOSAA	147		ng/L	154		95.7	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JFC James F. Constantino
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BB2 Bethany M Bisnett

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2250	1.135859	1.175661		1.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2270	0.7557946	0.7128042		-9.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2210	0.9172992	0.9026665		-2.9	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2160	0.5186879	0.4819864		-13.7	30
Perfluorooctanoic acid (PFOA)	A	2500	2650	1.014466	1.07518		6.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2450	0.9546162	1.024945		5.4	30
Perfluorononanoic acid (PFNA)	A	2500	2550	0.8583182	0.9147195		1.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2710	0.9883469	1.105104		8.5	30
N-EtFOSAA	A	2500	2530	0.8211978	0.9177848		1.2	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2800	1.00186	1.134988		11.9	30
N-MeFOSAA	A	2500	2460	0.9767918	1.045588		-1.8	30
Perfluorododecanoic acid (PFDoA)	A	2500	2650	1.175679	1.305484		6.0	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2720	1.152766	1.336643		8.6	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2640	0.9718999	1.117673		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2420	1.628033E-02	1.622857E-02		-3.3	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2370	1.429084	1.580493		0.4	30
9Cl-PF3ONS (F53B Major)	A	2330	2380	2.949299	3.33391		2.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2240	1.373201	1.369497		-5.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	23000	1.135859	1.204066		3.8	30
Perfluorohexanoic acid (PFHxA)	A	25000	26700	0.7557946	0.8400239		6.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	24500	0.9172992	0.9985564		7.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	26100	0.5186879	0.5836485		4.5	30
Perfluorooctanoic acid (PFOA)	A	25000	26800	1.014466	1.086907		7.4	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	24700	0.9546162	1.034115		6.4	30
Perfluorononanoic acid (PFNA)	A	25000	26700	0.8583182	0.958436		6.8	30
Perfluorodecanoic acid (PFDA)	A	25000	28400	0.9883469	1.157711		13.7	30
N-EtFOSAA	A	25000	26200	0.8211978	0.8869809		4.8	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27700	1.00186	1.125429		10.9	30
N-MeFOSAA	A	25000	26500	0.9767918	1.0947		6.1	30
Perfluorododecanoic acid (PFDoA)	A	25000	27800	1.175679	1.371556		11.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	28400	1.152766	1.396505		13.5	30
Perfluorotetradecanoic acid (PFTA)	A	25000	28000	0.9718999	1.184497		12.0	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25700	1.628033E-02	1.727919E-02		2.9	30
11Cl-PF3OUdS (F53B Minor)	A	23600	27200	1.429084	1.756578		15.1	30
9Cl-PF3ONS (F53B Major)	A	23300	26100	2.949299	3.549062		12.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	25000	1.373201	1.528624		6.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2240	1.135859	1.169424		0.8	30
Perfluorohexanoic acid (PFHxA)	A	2500	2580	0.7557946	0.8109661		3.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2350	0.9172992	0.9588437		3.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2450	0.5186879	0.5468278		-2.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2630	1.014466	1.06544		5.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2370	0.9546162	0.992586		2.1	30
Perfluorononanoic acid (PFNA)	A	2500	2530	0.8583182	0.9099244		1.4	30
Perfluorodecanoic acid (PFDA)	A	2500	2820	0.9883469	1.147251		12.7	30
N-EtFOSAA	A	2500	2470	0.8211978	0.8944513		-1.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2840	1.00186	1.15277		13.6	30
N-MeFOSAA	A	2500	2430	0.9767918	1.036022		-2.7	30
Perfluorododecanoic acid (PFDoA)	A	2500	2670	1.175679	1.314604		6.7	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2720	1.152766	1.339952		8.9	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2720	0.9718999	1.152383		9.0	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2470	1.628033E-02	0.0166028		-1.1	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2400	1.429084	1.601682		1.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2340	2.949299	3.284328		0.5	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2450	1.373201	1.49829		4.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21600	1.135859	1.127881		-2.8	30
Perfluorohexanoic acid (PFHxA)	A	25000	26800	0.7557946	0.843118		7.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	24000	0.9172992	0.978684		5.2	30
Perfluoroheptanoic acid (PFHpA)	A	25000	26500	0.5186879	0.5925618		6.1	30
Perfluorooctanoic acid (PFOA)	A	25000	27000	1.014466	1.091847		7.8	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	24200	0.9546162	1.015027		4.4	30
Perfluorononanoic acid (PFNA)	A	25000	26900	0.8583182	0.9668927		7.7	30
Perfluorodecanoic acid (PFDA)	A	25000	28300	0.9883469	1.151287		13.1	30
N-EtFOSAA	A	25000	26300	0.8211978	0.8902964		5.2	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27800	1.00186	1.127115		11.1	30
N-MeFOSAA	A	25000	26300	0.9767918	1.083849		5.0	30
Perfluorododecanoic acid (PFDoA)	A	25000	27700	1.175679	1.364352		10.8	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	28200	1.152766	1.387405		12.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27700	0.9718999	1.172784		10.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25800	1.628033E-02	1.735632E-02		3.4	30
11Cl-PF3OUdS (F53B Minor)	A	23600	26000	1.429084	1.683193		10.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25500	2.949299	3.47103		9.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	25200	1.373201	1.537678		6.7	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022



Contact: https://www.pacelabs.com/contact-us/contact-environmental-sciences/ Tighe & Bond

Address: 120 Front Street, Worcester, MA 01610

Phone: 508-754-2201

Project Location: Princeton Private Well Sampling

Project Number: P-0534017

Project Manager: Jeff Arps/Michael Scherer

Pace Analytical Quote Name/Number: Tighe & Bond

Invoice Recipient: M Scherer

Sampled By:

Pace Analytical Work Order #

Client Sample ID / Description: 2 Mountain

Beginning Date/Time: 10/18/21 1200

Ending Date/Time:

COMP/GRAB: GRAB

Matrix Code: DW

Conc Code: U

Format: PDF EXCEL

Other: SOXHLET

CLP Like Data Pkg Required:

Email To: mischerer@tighebond.com

Fax To #:

Analysis Requested:

Field Filtered:

Lab to Filter:

Field Filtered:

Lab to Filter:

PCB ONLY

VIALS PLASTIC BACTERIA ENCORE

GLASS PLASTIC BACTERIA ENCORE

PFAS 537.1

PFAS 537.1

PFAS 537.1

PFAS 537.1

PFAS 537.1

PFAS 537.1

PFAS 537.1

PFAS 537.1

PFAS 537.1

PFAS 537.1

PFAS 537.1

PFAS 537.1

PFAS 537.1

PFAS 537.1

PFAS 537.1

PFAS 537.1

Client Comments: Please report the 14 compound list

MA MCP Required

MCP Certification Forms Required

CT RCP Required

RCP Certification Forms Required

MA State DW Required

MA State DW Required

MA State DW Required

MA State DW Required

MA State DW Required

MA State DW Required

MA State DW Required

MA State DW Required

MA State DW Required

MA State DW Required

MA State DW Required

MA State DW Required

MA State DW Required

MA State DW Required

MA State DW Required

MA State DW Required

1 Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

2 Preservation Codes:
I = Ice
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

*Pace Analytical is not responsible for missing samples from prepackaged coolers

Glassware in the fridge? Y / N

Glassware in freezer? Y / N

Prepackaged Cooler? Y / N

20 Preservation Codes:
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

Other: Chromatogram
 AIHA-LAP, LLC

NECAC and AIHA-LAP, LLC Accredited

Government Municipality 21 J Brownfield

Federal City

WRTA MWRA School MBTA

Project Entity

Comments:

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test[®]
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T & B
 Received By GL Date 10/19/21 Time 1550
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

P-0534
November 29, 2021

Michael and Rebecca Laughlin
6 Connor Lane
Princeton, Massachusetts 01541

Re: **Residential Well Sampling
6 Connor Lane, Princeton**

Dear Mr. and Mrs. Laughlin:

Enclosed is a copy of the laboratory analytical results for the water sample collected from the residential well located at 6 Connor Lane as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the residential well water sample on October 14, 2021, and Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts analyzed the sample for per- and polyfluoroalkyl substances (PFAS). Con Test is a Massachusetts-certified environmental laboratory.

A copy of the lab report is attached to this letter. Analytical results have been compared to *Massachusetts Drinking Water Maximum Contaminant Levels (MMCLs, 310 CMR 22.00)* and *Massachusetts Contingency Plan Method 1 GW-1 Groundwater Standard (MCP, 310 CMR 40.0974)* of 20 nanograms per liter (ng/L), or parts per trillion (ppt), for the combined total of six specific PFAS compounds (PFAS6).

Your laboratory results indicate that the PFAS6 concentration was reported at 3.7 ppt in the water samples collected on October 14, 2021, which is below the MassDEP MCL of 20 ppt. Because of this detection, you will continue to receive bottled water from the Town.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, with any questions.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup





Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

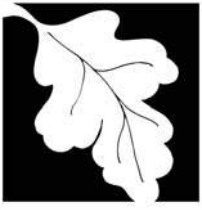
1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____
2. MCP phase of work during which the sampling will be/has been conducted:
- | | |
|--|---|
| Immediate Response Action | Phase III Feasibility Evaluation |
| Release Abatement Measure | Phase IV Remedy Implementation Plan |
| Utility-related Abatement Measure | Phase V/Remedy Operation Status |
| Phase I Initial Site Investigation | Post-Temporary Solution Operation, Maintenance and Monitoring |
| Phase II Comprehensive Site Assessment | Other _____ |
- (specify)
3. Description of property where sampling will be/has been conducted:
residential commercial industrial school/playground Other _____
(specify)
4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

-

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	6 Connor Lane			
		UNKNOWN			
Well Depth (feet)					
Sampling Date		8/31/2020	1/21/2021	4/20/2021	10/14/2021
EPA 537.1 (ng/L)					
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	3.3	2.9	5
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	2.3	2.9	3.7
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	5.6	5.8	8.7
Regulated Total	20	ND (2.0)	2.3	2.9	3.7

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

October 27, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

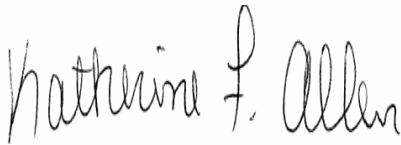
Project Location: 6 Connor, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1145

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/27/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1145

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 6 Connor, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
6 Connor	21J1145-01	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative

Project Location: 6 Connor, Princeton, MA

Sample Description:

Work Order: 21J1145

Date Received: 10/19/2021

Field Sample #: 6 Connor

Sampled: 10/14/2021 12:00

Sample ID: 21J1145-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:43	BLH
Perfluorohexanoic acid (PFHxA)	5.0	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:43	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:43	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:43	BLH
Perfluorooctanoic acid (PFOA)	3.7	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:43	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:43	BLH
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:43	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:43	BLH
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:43	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:43	BLH
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:43	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:43	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:43	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:43	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:43	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:43	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:43	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:43	BLH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
13C-PFHxA	102	70-130	10/26/21 11:43
M3HFPO-DA	95.6	70-130	10/26/21 11:43
13C-PFDA	102	70-130	10/26/21 11:43
d5-NEtFOSAA	114	70-130	10/26/21 11:43

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1145-01 [6 Connor]	B292862	268	1.00	10/22/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292862 - EPA 537.1										
Blank (B292862-BLK1)										
Prepared: 10/22/21 Analyzed: 10/26/21										
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	43.8		ng/L	37.3		117	70-130			
Surrogate: M3HFPO-DA	43.4		ng/L	37.3		116	70-130			
Surrogate: 13C-PFDA	37.9		ng/L	37.3		102	70-130			
Surrogate: d5-NEtFOSAA	170		ng/L	149		114	70-130			
LCS (B292862-BS1)										
Prepared: 10/22/21 Analyzed: 10/26/21										
Perfluorobutanesulfonic acid (PFBS)	15.8	1.9	ng/L	16.5		95.7	70-130			
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.6	70-130			
Perfluorohexanesulfonic acid (PFHxS)	17.0	1.9	ng/L	17.0		99.8	70-130			
Perfluoroheptanoic acid (PFHpA)	16.3	1.9	ng/L	18.6		87.6	70-130			
Perfluorooctanoic acid (PFOA)	17.6	1.9	ng/L	18.6		94.7	70-130			
Perfluorooctanesulfonic acid (PFOS)	15.8	1.9	ng/L	17.2		91.4	70-130			
Perfluorononanoic acid (PFNA)	15.4	1.9	ng/L	18.6		83.1	70-130			
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130			
N-EtFOSAA	17.4	1.9	ng/L	18.6		93.6	70-130			
Perfluoroundecanoic acid (PFUnA)	17.8	1.9	ng/L	18.6		95.7	70-130			
N-MeFOSAA	17.3	1.9	ng/L	18.6		93.2	70-130			
Perfluorododecanoic acid (PFDoA)	17.7	1.9	ng/L	18.6		95.2	70-130			
Perfluorotridecanoic acid (PFTTrDA)	17.2	1.9	ng/L	18.6		92.4	70-130			
Perfluorotetradecanoic acid (PFTA)	17.4	1.9	ng/L	18.6		93.8	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.3	1.9	ng/L	18.6		93.1	70-130			
11Cl-PF3OUdS (F53B Minor)	18.0	1.9	ng/L	17.5		103	70-130			
9Cl-PF3ONS (F53B Major)	17.9	1.9	ng/L	17.3		103	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.8	1.9	ng/L	17.6		95.4	70-130			
Surrogate: 13C-PFHxA	41.0		ng/L	37.2		110	70-130			
Surrogate: M3HFPO-DA	40.4		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.9		ng/L	37.2		99.2	70-130			
Surrogate: d5-NEtFOSAA	163		ng/L	149		109	70-130			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292862 - EPA 537.1										
LCS Dup (B292862-BSD1)										
					Prepared: 10/22/21 Analyzed: 10/26/21					
Perfluorobutanesulfonic acid (PFBS)	15.5	1.9	ng/L	16.5		93.8	70-130	1.88	30	
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.7	70-130	0.343	30	
Perfluorohexanesulfonic acid (PFHxS)	17.1	1.9	ng/L	17.0		101	70-130	1.06	30	
Perfluoroheptanoic acid (PFHpA)	16.1	1.9	ng/L	18.6		86.3	70-130	1.32	30	
Perfluorooctanoic acid (PFOA)	17.1	1.9	ng/L	18.6		91.9	70-130	2.72	30	
Perfluorooctanesulfonic acid (PFOS)	15.4	1.9	ng/L	17.3		89.0	70-130	2.44	30	
Perfluorononanoic acid (PFNA)	15.3	1.9	ng/L	18.6		82.0	70-130	1.12	30	
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130	0.149	30	
N-EtFOSAA	17.1	1.9	ng/L	18.6		91.7	70-130	1.81	30	
Perfluoroundecanoic acid (PFUnA)	18.0	1.9	ng/L	18.6		96.5	70-130	1.08	30	
N-MeFOSAA	17.8	1.9	ng/L	18.6		95.6	70-130	2.69	30	
Perfluorododecanoic acid (PFDoA)	17.3	1.9	ng/L	18.6		92.9	70-130	2.31	30	
Perfluorotridecanoic acid (PFTrDA)	17.3	1.9	ng/L	18.6		92.9	70-130	0.701	30	
Perfluorotetradecanoic acid (PFTA)	17.1	1.9	ng/L	18.6		92.0	70-130	1.83	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.1	1.9	ng/L	18.6		91.9	70-130	1.05	30	
11Cl-PF3OUdS (F53B Minor)	17.8	1.9	ng/L	17.6		101	70-130	1.35	30	
9Cl-PF3ONS (F53B Major)	17.6	1.9	ng/L	17.4		101	70-130	2.07	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.7	1.9	ng/L	17.6		95.1	70-130	0.145	30	
Surrogate: 13C-PFHxA	40.7		ng/L	37.2		109	70-130			
Surrogate: M3HFPO-DA	40.5		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.7		ng/L	37.2		98.5	70-130			
Surrogate: d5-NEtFOSAA	166		ng/L	149		111	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BAA Bonita A. Abanulo

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	444	442	1.205187	1.224447		-0.5	30
Perfluorohexanoic acid (PFHxA)	A	500	493	0.7174549	0.7339039		-1.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	467	0.9422487	0.9997435		2.2	30
Perfluoroheptanoic acid (PFHpA)	A	500	429	0.5131844	0.4640475		-14.1	30
Perfluorooctanoic acid (PFOA)	A	500	551	1.018894	1.158365		10.3	30
Perfluorooctanesulfonic acid (PFOS)	A	464	478	0.9862048	1.021105		2.9	30
Perfluorononanoic acid (PFNA)	A	500	412	0.9556153	0.8088272		-17.6	30
Perfluorodecanoic acid (PFDA)	A	500	480	1.019289	1.029208		-4.1	30
N-EtFOSAA	A	500	483	0.7469728	0.748993		-3.4	30
Perfluoroundecanoic acid (PFUnA)	A	500	522	0.9840387	1.060965		4.3	30
N-MeFOSAA	A	500	507	0.9030075	0.9168343		1.3	30
Perfluorododecanoic acid (PFDoA)	A	500	500	1.153654	1.231809		0.07	30
Perfluorotridecanoic acid (PFTrDA)	A	500	453	1.231259	1.166599		-9.4	30
Perfluorotetradecanoic acid (PFTA)	A	500	467	1.033649	1.001868		-6.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	549	1.481833E-02	1.651154E-02		9.8	30
11Cl-PF3OUdS (F53B Minor)	A	472	474	1.641038	1.639428		0.3	30
9Cl-PF3ONS (F53B Major)	A	466	466	3.518141	3.5012		0.09	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	446	1.350704	1.324111		-5.5	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2080	1.205187	1.151823		-6.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2450	0.7174549	0.7276259		-2.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2280	0.9422487	0.9796582		0.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2190	0.5131844	0.4730903		-12.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2540	1.018894	1.065353		1.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2240	0.9862048	0.956855		-3.5	30
Perfluorononanoic acid (PFNA)	A	2500	2280	0.9556153	0.8939886		-8.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2470	1.019289	1.059261		-1.3	30
N-EtFOSAA	A	2500	2540	0.7469728	0.78652		1.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2690	0.9840387	1.094937		7.7	30
N-MeFOSAA	A	2500	2470	0.9030075	0.8958022		-1.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2600	1.153654	1.279111		3.9	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2620	1.231259	1.3494		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2650	1.033649	1.137421		5.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2380	1.481833E-02	1.432532E-02		-4.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.710564		4.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2460	3.518141	3.704886		5.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2350	1.350704	1.396409		-0.4	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21900	1.205187	1.212846		-1.4	30
Perfluorohexanoic acid (PFHxA)	A	25000	25800	0.7174549	0.766353		3.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	0.9992528		2.1	30
Perfluoroheptanoic acid (PFHpA)	A	25000	24100	0.5131844	0.520733		-3.6	30
Perfluorooctanoic acid (PFOA)	A	25000	25600	1.018894	1.07771		2.6	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23500	0.9862048	1.003068		1.1	30
Perfluorononanoic acid (PFNA)	A	25000	23800	0.9556153	0.9362592		-4.6	30
Perfluorodecanoic acid (PFDA)	A	25000	25900	1.019289	1.111468		3.6	30
N-EtFOSAA	A	25000	25700	0.7469728	0.768614		3.0	30
Perfluoroundecanoic acid (PFUnA)	A	25000	26700	0.9840387	1.085744		6.7	30
N-MeFOSAA	A	25000	25400	0.9030075	0.9491052		1.7	30
Perfluorododecanoic acid (PFDoA)	A	25000	26600	1.153654	1.308219		6.3	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26200	1.231259	1.349207		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	26400	1.033649	1.134729		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25400	1.481833E-02	1.529015E-02		1.7	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25100	1.641038	1.825779		6.4	30
9Cl-PF3ONS (F53B Major)	A	23300	25000	3.518141	3.980416		7.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24300	1.350704	1.445925		3.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2090	1.205187	1.159763		-5.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2400	0.7174549	0.7136453		-4.1	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2220	0.9422487	0.9521833		-2.7	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2200	0.5131844	0.4751433		-12.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2490	1.018894	1.046674		-0.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	0.9862048	0.9647938		-2.7	30
Perfluorononanoic acid (PFNA)	A	2500	2290	0.9556153	0.897298		-8.6	30
Perfluorodecanoic acid (PFDA)	A	2500	2500	1.019289	1.072089		-0.1	30
N-EtFOSAA	A	2500	2490	0.7469728	0.7685828		-0.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2700	0.9840387	1.099698		8.1	30
N-MeFOSAA	A	2500	2480	0.9030075	0.8993446		-0.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2610	1.153654	1.285782		4.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2540	1.231259	1.306517		1.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2560	1.033649	1.098145		2.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2340	1.481833E-02	1.407048E-02		-6.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.708613		4.2	30
9Cl-PF3ONS (F53B Major)	A	2330	2520	3.518141	3.798072		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2340	1.350704	1.388313		-1.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV5

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	22000	1.205187	1.219675		-0.9	30
Perfluorohexanoic acid (PFHxA)	A	25000	25700	0.7174549	0.7639828		2.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	1.001704		2.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	23800	0.5131844	0.5144887		-4.8	30
Perfluorooctanoic acid (PFOA)	A	25000	25400	1.018894	1.068279		1.7	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23600	0.9862048	1.009655		1.8	30
Perfluorononanoic acid (PFNA)	A	25000	23700	0.9556153	0.9312701		-5.1	30
Perfluorodecanoic acid (PFDA)	A	25000	26200	1.019289	1.125386		4.9	30
N-EtFOSAA	A	25000	26000	0.7469728	0.7756554		3.9	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27400	0.9840387	1.11475		9.6	30
N-MeFOSAA	A	25000	25900	0.9030075	0.9658908		3.4	30
Perfluorododecanoic acid (PFDoA)	A	25000	27400	1.153654	1.347163		9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26900	1.231259	1.383697		7.4	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27100	1.033649	1.164994		8.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	23700	1.481833E-02	1.427195E-02		-5.1	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25800	1.641038	1.874904		9.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25200	3.518141	4.012609		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24000	1.350704	1.426229		1.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

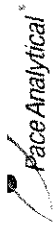
Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

1800 Elm Street SE
Minneapolis, MN 55414

CHAIN OF CUSTODY RECORD

https://www.pacelabs.com/

Phone: 612-607-6400
Fax: 612-607-6344



Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
Tighe & Bond
120 Front Street, Worcester, MA 01610
Phone: 508-754-2201
Project Location: Princeton Private Well Sampling Princeton, MA
Project Number: P-0534017
Project Manager: Jeff Arps/Michael Scherer
Pace Analytical Quote Name/Number
Invoice Recipient:
Sampled By: Tighe & Bond M. Scherer

7-Day 10-Day Field Filtered
 PFAS 10-Day (std) Due Date:
 1-Day 3-Day Field Filtered
 2-Day 4-Day Lab to Filter

Format: PDF EXCEL
 Other:
 CLP Like Data Pkg Required:
 Email To: mischerer@tighetbond.com
 Fax To #:

PCB ONLY

SOXHLET
 NON SOXHLET

Ending Date/Time	Matrix Code	CONC/GRAB	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
10/14/21 1200	DW	GRAB	U				

ANALYSIS REQUESTED

1	2	3	4	5	6	7	8	9	10	11	12

1 Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

2 Preservation Codes:
 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

1 Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
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 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

Client Comments: Please report the 14 compound list

Date/Time: 10/14/21 1500
 Date/Time: 10/15
 Date/Time: 10/19/21 1550
 Date/Time: 10/19/21 1550
 Date/Time: 10/19/21 1550

Relinquished by: (signature) *[Signature]*
 Received by: (signature) *[Signature]*

Relinquished by: (signature) *[Signature]*
 Received by: (signature) *[Signature]*

Relinquished by: (signature) *[Signature]*
 Received by: (signature) *[Signature]*

Relinquished by: (signature) *[Signature]*
 Received by: (signature) *[Signature]*

Relinquished by: (signature) *[Signature]*
 Received by: (signature) *[Signature]*

Special Requirements: MA MCP Required
 MCP Certification Form Required
 CT RCP Required
 RCP Certification Form Required
 MA State DW Required

Project Entity: Government Municipality WRTA
 Federal 21 J School
 City Brownfield MBTA

Other: Chromatogram
 AIHA-LAP, LLC

Disclaimers: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test[®]
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T & B
 Received By GA Date 10/19/21 Time 1550
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

P-0534
November 29, 2021

Elaine McCullough
11 Gregory Hill Road
Princeton, Massachusetts 01541

Re: **Residential Well Sampling
11 Gregory Hill Rd, Princeton**

Dear Ms. McCullough:

Enclosed is a copy of the laboratory analytical results for the groundwater samples collected from the residential well located at 11 Gregory Hill Road as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the residential well water samples on October 14 and November 11, 2021 and Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts analyzed the samples for per- and polyfluoroalkyl substances (PFAS). Con Test is a Massachusetts-certified environmental laboratory.

The lab reports are attached to this letter. Analytical results have been compared to MassDEP's drinking water Maximum Contaminant Level (MCL) and GW-1 groundwater standard of 20 nanograms per liter (ng/L) or parts per trillion (ppt) for the total of six specific PFAS compounds (PFAS6).

Your laboratory results indicate that PFAS6 was detected at 1.9 ppt on October 14, 2021. Since PFAS6 have not previously been detected in your well water a second sample was collected to confirm the October 14, 2021 results. The second sample, collected on November 11, 2021, indicated a PFAS6 concentration of 2.5 ppt. The concentrations of PFAS6 detected on both sampling dates are below the MassDEP MCL of 20 ppt. Because of these detections, you are being provided with bottled water by the Town.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, with any questions.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup





-

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____

City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____

2. Street Address: _____

City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____

City/Town: _____ Zip Code: _____

2. MCP phase of work during which the sampling will be/has been conducted:

Immediate Response Action

Release Abatement Measure

Utility-related Abatement Measure

Phase I Initial Site Investigation

Phase II Comprehensive Site Assessment

Phase III Feasibility Evaluation

Phase IV Remedy Implementation Plan

Phase V/Remedy Operation Status

Post-Temporary Solution Operation, Maintenance and Monitoring

Other _____

(specify)

3. Description of property where sampling will be/has been conducted:

residential commercial industrial school/playground Other _____

(specify)

4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

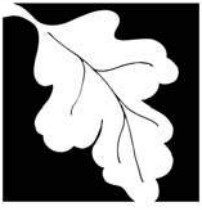
E. Contact information related to the party providing this notice:

Contact Name: _____

Street Address: _____

City/Town: _____ Zip Code: _____

Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

-

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	11 Gregory Hill Rd						
		UNKNOWN						
		1/22/2020	5/29/2020	10/1/2020	1/19/2021	4/21/2021	10/14/2021	11/11/2021
Well Depth (feet)								
Sampling Date								
EPA 537.1 (ng/L)								
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	1.9	2.5
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (1.9)	ND (1.8)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	1.9	2.5
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	1.9	2.5

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

November 2, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

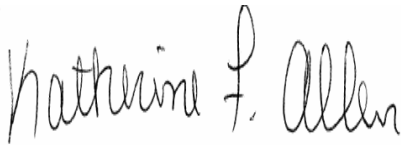
Project Location: Gregory Hill, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1144

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 11/2/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1144

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Gregory Hill, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
11 Gregory Hill	21J1144-01	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Gregory Hill, Princeton, MA

Sample Description:

Work Order: 21J1144

Date Received: 10/19/2021

Field Sample #: 11 Gregory Hill

Sampled: 10/14/2021 12:00

Sample ID: 21J1144-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	10/28/21	10/29/21 11:40	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	10/28/21	10/29/21 11:40	BLH
Perfluorohexanesulfonic acid (PFHxS)	1.9	1.9		ng/L	1		EPA 537.1	10/28/21	10/29/21 11:40	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	10/28/21	10/29/21 11:40	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		EPA 537.1	10/28/21	10/29/21 11:40	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9		ng/L	1		EPA 537.1	10/28/21	10/29/21 11:40	BLH
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	10/28/21	10/29/21 11:40	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	10/28/21	10/29/21 11:40	BLH
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/28/21	10/29/21 11:40	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	10/28/21	10/29/21 11:40	BLH
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/28/21	10/29/21 11:40	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	10/28/21	10/29/21 11:40	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	10/28/21	10/29/21 11:40	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	10/28/21	10/29/21 11:40	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	10/28/21	10/29/21 11:40	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	10/28/21	10/29/21 11:40	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	10/28/21	10/29/21 11:40	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	10/28/21	10/29/21 11:40	BLH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
13C-PFHxA	88.3	70-130	10/29/21 11:40
M3HFPO-DA	85.8	70-130	10/29/21 11:40
13C-PFDA	94.1	70-130	10/29/21 11:40
d5-NEtFOSAA	111	70-130	10/29/21 11:40

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1144-01RE1 [11 Gregory Hill]	B293267	265	1.00	10/28/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B292862 - EPA 537.1

Blank (B292862-BLK1)

Prepared: 10/22/21 Analyzed: 10/26/21

Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	43.8		ng/L	37.3		117	70-130			
Surrogate: M3HFPO-DA	43.4		ng/L	37.3		116	70-130			
Surrogate: 13C-PFDA	37.9		ng/L	37.3		102	70-130			
Surrogate: d5-NEtFOSAA	170		ng/L	149		114	70-130			

LCS (B292862-BS1)

Prepared: 10/22/21 Analyzed: 10/26/21

Perfluorobutanesulfonic acid (PFBS)	15.8	1.9	ng/L	16.5		95.7	70-130			
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.6	70-130			
Perfluorohexanesulfonic acid (PFHxS)	17.0	1.9	ng/L	17.0		99.8	70-130			
Perfluoroheptanoic acid (PFHpA)	16.3	1.9	ng/L	18.6		87.6	70-130			
Perfluorooctanoic acid (PFOA)	17.6	1.9	ng/L	18.6		94.7	70-130			
Perfluorooctanesulfonic acid (PFOS)	15.8	1.9	ng/L	17.2		91.4	70-130			
Perfluorononanoic acid (PFNA)	15.4	1.9	ng/L	18.6		83.1	70-130			
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130			
N-EtFOSAA	17.4	1.9	ng/L	18.6		93.6	70-130			
Perfluoroundecanoic acid (PFUnA)	17.8	1.9	ng/L	18.6		95.7	70-130			
N-MeFOSAA	17.3	1.9	ng/L	18.6		93.2	70-130			
Perfluorododecanoic acid (PFDoA)	17.7	1.9	ng/L	18.6		95.2	70-130			
Perfluorotridecanoic acid (PFTTrDA)	17.2	1.9	ng/L	18.6		92.4	70-130			
Perfluorotetradecanoic acid (PFTA)	17.4	1.9	ng/L	18.6		93.8	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.3	1.9	ng/L	18.6		93.1	70-130			
11Cl-PF3OUdS (F53B Minor)	18.0	1.9	ng/L	17.5		103	70-130			
9Cl-PF3ONS (F53B Major)	17.9	1.9	ng/L	17.3		103	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.8	1.9	ng/L	17.6		95.4	70-130			
Surrogate: 13C-PFHxA	41.0		ng/L	37.2		110	70-130			
Surrogate: M3HFPO-DA	40.4		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.9		ng/L	37.2		99.2	70-130			
Surrogate: d5-NEtFOSAA	163		ng/L	149		109	70-130			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B292862 - EPA 537.1

LCS Dup (B292862-BSD1)

Prepared: 10/22/21 Analyzed: 10/26/21

Perfluorobutanesulfonic acid (PFBS)	15.5	1.9	ng/L	16.5		93.8	70-130	1.88	30	
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.7	70-130	0.343	30	
Perfluorohexanesulfonic acid (PFHxS)	17.1	1.9	ng/L	17.0		101	70-130	1.06	30	
Perfluoroheptanoic acid (PFHpA)	16.1	1.9	ng/L	18.6		86.3	70-130	1.32	30	
Perfluorooctanoic acid (PFOA)	17.1	1.9	ng/L	18.6		91.9	70-130	2.72	30	
Perfluorooctanesulfonic acid (PFOS)	15.4	1.9	ng/L	17.3		89.0	70-130	2.44	30	
Perfluorononanoic acid (PFNA)	15.3	1.9	ng/L	18.6		82.0	70-130	1.12	30	
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130	0.149	30	
N-EtFOSAA	17.1	1.9	ng/L	18.6		91.7	70-130	1.81	30	
Perfluoroundecanoic acid (PFUnA)	18.0	1.9	ng/L	18.6		96.5	70-130	1.08	30	
N-MeFOSAA	17.8	1.9	ng/L	18.6		95.6	70-130	2.69	30	
Perfluorododecanoic acid (PFDoA)	17.3	1.9	ng/L	18.6		92.9	70-130	2.31	30	
Perfluorotridecanoic acid (PFTrDA)	17.3	1.9	ng/L	18.6		92.9	70-130	0.701	30	
Perfluorotetradecanoic acid (PFTA)	17.1	1.9	ng/L	18.6		92.0	70-130	1.83	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.1	1.9	ng/L	18.6		91.9	70-130	1.05	30	
11Cl-PF3OUdS (F53B Minor)	17.8	1.9	ng/L	17.6		101	70-130	1.35	30	
9Cl-PF3ONS (F53B Major)	17.6	1.9	ng/L	17.4		101	70-130	2.07	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.7	1.9	ng/L	17.6		95.1	70-130	0.145	30	
Surrogate: 13C-PFHxA	40.7		ng/L	37.2		109	70-130			
Surrogate: M3HFPO-DA	40.5		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.7		ng/L	37.2		98.5	70-130			
Surrogate: d5-NEtFOSAA	166		ng/L	149		111	70-130			

Batch B293267 - EPA 537.1

Blank (B293267-BLK1)

Prepared: 10/28/21 Analyzed: 10/29/21

Perfluorobutanesulfonic acid (PFBS)	ND	1.8	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.8	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.8	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.8	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.8	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.8	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.8	ng/L							
N-EtFOSAA	ND	1.8	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.8	ng/L							
N-MeFOSAA	ND	1.8	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.8	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	1.8	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.8	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.8	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.8	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.8	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8	ng/L							
Surrogate: 13C-PFHxA	35.6		ng/L	36.2		98.4	70-130			
Surrogate: M3HFPO-DA	34.9		ng/L	36.2		96.3	70-130			
Surrogate: 13C-PFDA	31.3		ng/L	36.2		86.4	70-130			
Surrogate: d5-NEtFOSAA	156		ng/L	145		108	70-130			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B293267 - EPA 537.1										
LCS (B293267-BS1)										
					Prepared: 10/28/21 Analyzed: 10/29/21					
Perfluorobutanesulfonic acid (PFBS)	9.14	1.8	ng/L	8.07		113	70-130			
Perfluorohexanoic acid (PFHxA)	9.19	1.8	ng/L	9.10		101	70-130			
Perfluorohexanesulfonic acid (PFHxS)	8.70	1.8	ng/L	8.32		105	70-130			
Perfluoroheptanoic acid (PFHpA)	7.58	1.8	ng/L	9.10		83.3	70-130			
Perfluorooctanoic acid (PFOA)	8.46	1.8	ng/L	9.10		93.0	70-130			
Perfluorooctanesulfonic acid (PFOS)	8.20	1.8	ng/L	8.45		97.0	70-130			
Perfluorononanoic acid (PFNA)	8.50	1.8	ng/L	9.10		93.4	70-130			
Perfluorodecanoic acid (PFDA)	8.14	1.8	ng/L	9.10		89.5	70-130			
N-EtFOSAA	8.64	1.8	ng/L	9.10		94.9	70-130			
Perfluoroundecanoic acid (PFUnA)	8.54	1.8	ng/L	9.10		93.9	70-130			
N-MeFOSAA	8.72	1.8	ng/L	9.10		95.8	70-130			
Perfluorododecanoic acid (PFDoA)	8.19	1.8	ng/L	9.10		90.0	70-130			
Perfluorotridecanoic acid (PFTrDA)	7.92	1.8	ng/L	9.10		87.1	70-130			
Perfluorotetradecanoic acid (PFTA)	7.96	1.8	ng/L	9.10		87.4	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	10.8	1.8	ng/L	9.10		119	70-130			
11Cl-PF3OUdS (F53B Minor)	7.89	1.8	ng/L	8.58		91.9	70-130			
9Cl-PF3ONS (F53B Major)	8.15	1.8	ng/L	8.49		95.9	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	7.99	1.8	ng/L	8.60		92.9	70-130			
Surrogate: 13C-PFHxA	43.3		ng/L	36.4		119	70-130			
Surrogate: M3HFPO-DA	42.5		ng/L	36.4		117	70-130			
Surrogate: 13C-PFDA	35.1		ng/L	36.4		96.5	70-130			
Surrogate: d5-NEtFOSAA	172		ng/L	146		118	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m ³	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BAA Bonita A. Abanulo

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	444	442	1.205187	1.224447		-0.5	30
Perfluorohexanoic acid (PFHxA)	A	500	493	0.7174549	0.7339039		-1.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	467	0.9422487	0.9997435		2.2	30
Perfluoroheptanoic acid (PFHpA)	A	500	429	0.5131844	0.4640475		-14.1	30
Perfluorooctanoic acid (PFOA)	A	500	551	1.018894	1.158365		10.3	30
Perfluorooctanesulfonic acid (PFOS)	A	464	478	0.9862048	1.021105		2.9	30
Perfluorononanoic acid (PFNA)	A	500	412	0.9556153	0.8088272		-17.6	30
Perfluorodecanoic acid (PFDA)	A	500	480	1.019289	1.029208		-4.1	30
N-EtFOSAA	A	500	483	0.7469728	0.748993		-3.4	30
Perfluoroundecanoic acid (PFUnA)	A	500	522	0.9840387	1.060965		4.3	30
N-MeFOSAA	A	500	507	0.9030075	0.9168343		1.3	30
Perfluorododecanoic acid (PFDoA)	A	500	500	1.153654	1.231809		0.07	30
Perfluorotridecanoic acid (PFTrDA)	A	500	453	1.231259	1.166599		-9.4	30
Perfluorotetradecanoic acid (PFTA)	A	500	467	1.033649	1.001868		-6.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	549	1.481833E-02	1.651154E-02		9.8	30
11Cl-PF3OUdS (F53B Minor)	A	472	474	1.641038	1.639428		0.3	30
9Cl-PF3ONS (F53B Major)	A	466	466	3.518141	3.5012		0.09	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	446	1.350704	1.324111		-5.5	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2080	1.205187	1.151823		-6.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2450	0.7174549	0.7276259		-2.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2280	0.9422487	0.9796582		0.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2190	0.5131844	0.4730903		-12.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2540	1.018894	1.065353		1.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2240	0.9862048	0.956855		-3.5	30
Perfluorononanoic acid (PFNA)	A	2500	2280	0.9556153	0.8939886		-8.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2470	1.019289	1.059261		-1.3	30
N-EtFOSAA	A	2500	2540	0.7469728	0.78652		1.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2690	0.9840387	1.094937		7.7	30
N-MeFOSAA	A	2500	2470	0.9030075	0.8958022		-1.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2600	1.153654	1.279111		3.9	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2620	1.231259	1.3494		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2650	1.033649	1.137421		5.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2380	1.481833E-02	1.432532E-02		-4.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.710564		4.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2460	3.518141	3.704886		5.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2350	1.350704	1.396409		-0.4	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21900	1.205187	1.212846		-1.4	30
Perfluorohexanoic acid (PFHxA)	A	25000	25800	0.7174549	0.766353		3.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	0.9992528		2.1	30
Perfluoroheptanoic acid (PFHpA)	A	25000	24100	0.5131844	0.520733		-3.6	30
Perfluorooctanoic acid (PFOA)	A	25000	25600	1.018894	1.07771		2.6	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23500	0.9862048	1.003068		1.1	30
Perfluorononanoic acid (PFNA)	A	25000	23800	0.9556153	0.9362592		-4.6	30
Perfluorodecanoic acid (PFDA)	A	25000	25900	1.019289	1.111468		3.6	30
N-EtFOSAA	A	25000	25700	0.7469728	0.768614		3.0	30
Perfluoroundecanoic acid (PFUnA)	A	25000	26700	0.9840387	1.085744		6.7	30
N-MeFOSAA	A	25000	25400	0.9030075	0.9491052		1.7	30
Perfluorododecanoic acid (PFDoA)	A	25000	26600	1.153654	1.308219		6.3	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26200	1.231259	1.349207		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	26400	1.033649	1.134729		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25400	1.481833E-02	1.529015E-02		1.7	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25100	1.641038	1.825779		6.4	30
9Cl-PF3ONS (F53B Major)	A	23300	25000	3.518141	3.980416		7.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24300	1.350704	1.445925		3.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2090	1.205187	1.159763		-5.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2400	0.7174549	0.7136453		-4.1	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2220	0.9422487	0.9521833		-2.7	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2200	0.5131844	0.4751433		-12.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2490	1.018894	1.046674		-0.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	0.9862048	0.9647938		-2.7	30
Perfluorononanoic acid (PFNA)	A	2500	2290	0.9556153	0.897298		-8.6	30
Perfluorodecanoic acid (PFDA)	A	2500	2500	1.019289	1.072089		-0.1	30
N-EtFOSAA	A	2500	2490	0.7469728	0.7685828		-0.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2700	0.9840387	1.099698		8.1	30
N-MeFOSAA	A	2500	2480	0.9030075	0.8993446		-0.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2610	1.153654	1.285782		4.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2540	1.231259	1.306517		1.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2560	1.033649	1.098145		2.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2340	1.481833E-02	1.407048E-02		-6.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.708613		4.2	30
9Cl-PF3ONS (F53B Major)	A	2330	2520	3.518141	3.798072		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2340	1.350704	1.388313		-1.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV5

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	22000	1.205187	1.219675		-0.9	30
Perfluorohexanoic acid (PFHxA)	A	25000	25700	0.7174549	0.7639828		2.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	1.001704		2.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	23800	0.5131844	0.5144887		-4.8	30
Perfluorooctanoic acid (PFOA)	A	25000	25400	1.018894	1.068279		1.7	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23600	0.9862048	1.009655		1.8	30
Perfluorononanoic acid (PFNA)	A	25000	23700	0.9556153	0.9312701		-5.1	30
Perfluorodecanoic acid (PFDA)	A	25000	26200	1.019289	1.125386		4.9	30
N-EtFOSAA	A	25000	26000	0.7469728	0.7756554		3.9	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27400	0.9840387	1.11475		9.6	30
N-MeFOSAA	A	25000	25900	0.9030075	0.9658908		3.4	30
Perfluorododecanoic acid (PFDoA)	A	25000	27400	1.153654	1.347163		9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26900	1.231259	1.383697		7.4	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27100	1.033649	1.164994		8.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	23700	1.481833E-02	1.427195E-02		-5.1	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25800	1.641038	1.874904		9.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25200	3.518141	4.012609		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24000	1.350704	1.426229		1.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064897-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	444	443	1.205187	1.226455		-0.3	30
Perfluorohexanoic acid (PFHxA)	A	500	477	0.7174549	0.7099217		-4.6	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	481	0.9422487	1.029133		5.2	30
Perfluoroheptanoic acid (PFHpA)	A	500	405	0.5131844	0.4379082		-19.0	30
Perfluorooctanoic acid (PFOA)	A	500	632	1.018894	1.327943		26.4	30
Perfluorooctanesulfonic acid (PFOS)	A	464	489	0.9862048	1.046449		5.5	30
Perfluorononanoic acid (PFNA)	A	500	459	0.9556153	0.9020328		-8.1	30
Perfluorodecanoic acid (PFDA)	A	500	453	1.019289	0.9712659		-9.5	30
N-EtFOSAA	A	500	448	0.7469728	0.6940397		-10.5	30
Perfluoroundecanoic acid (PFUnA)	A	500	509	0.9840387	1.03491		1.7	30
N-MeFOSAA	A	500	504	0.9030075	0.9119866		0.8	30
Perfluorododecanoic acid (PFDoA)	A	500	466	1.153654	1.146872		-6.8	30
Perfluorotridecanoic acid (PFTrDA)	A	500	431	1.231259	1.110818		-13.8	30
Perfluorotetradecanoic acid (PFTA)	A	500	435	1.033649	0.9336031		-13.0	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	607	1.481833E-02	1.826031E-02		21.5	30
11Cl-PF3OUdS (F53B Minor)	A	472	457	1.641038	1.580809		-3.2	30
9Cl-PF3ONS (F53B Major)	A	466	444	3.518141	3.330666		-4.8	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	436	1.350704	1.293998		-7.7	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064897-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2280	1.205187	1.262864		2.6	30
Perfluorohexanoic acid (PFHxA)	A	2500	2430	0.7174549	0.7244713		-2.6	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2350	0.9422487	1.008919		3.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2100	0.5131844	0.454576		-15.9	30
Perfluorooctanoic acid (PFOA)	A	2500	2610	1.018894	1.096261		4.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2320	0.9862048	0.9929657		0.1	30
Perfluorononanoic acid (PFNA)	A	2500	2390	0.9556153	0.9386232		-4.4	30
Perfluorodecanoic acid (PFDA)	A	2500	2460	1.019289	1.054295		-1.8	30
N-EtFOSAA	A	2500	2410	0.7469728	0.7452806		-3.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2660	0.9840387	1.08048		6.2	30
N-MeFOSAA	A	2500	2410	0.9030075	0.8730947		-3.7	30
Perfluorododecanoic acid (PFDoA)	A	2500	2480	1.153654	1.221983		-0.7	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2340	1.231259	1.208076		-6.2	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2300	1.033649	0.9886461		-7.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2890	1.481833E-02	1.740427E-02		15.8	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2430	1.641038	1.68673		2.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2520	3.518141	3.797453		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2370	1.350704	1.408334		0.5	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 - Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T & B

Received By GL Date 10/19/11 Time 1550

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____

Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	<u>2</u>	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear
DI-		Other Glass		Other Plastic		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Unused Media

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear
DI-		Other Plastic		Other Glass		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Comments:

November 22, 2021

Jeff Arps
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

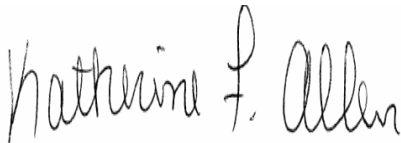
Project Location: 11 Gregory Hill
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21K1046

Enclosed are results of analyses for samples as received by the laboratory on November 16, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Jeff Arps

REPORT DATE: 11/22/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21K1046

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 11 Gregory Hill

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
11 Gregory Hill	21K1046-01	Drinking Water		EPA 537.1	
TB-11112021	21K1046-02	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Tod Kopycinski". The signature is written in a cursive style with a large, sweeping initial "T".

Tod E. Kopycinski
Laboratory Director

Project Location: 11 Gregory Hill

Sample Description:

Work Order: 21K1046

Date Received: 11/16/2021

Field Sample #: 11 Gregory Hill

Sampled: 11/11/2021 09:45

Sample ID: 21K1046-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.8		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:52	JFC
Perfluorohexanoic acid (PFHxA)	ND	1.8		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:52	JFC
Perfluorohexanesulfonic acid (PFHxS)	2.5	1.8		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:52	JFC
Perfluoroheptanoic acid (PFHpA)	ND	1.8		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:52	JFC
Perfluorooctanoic acid (PFOA)	ND	1.8		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:52	JFC
Perfluorooctanesulfonic acid (PFOS)	ND	1.8		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:52	JFC
Perfluorononanoic acid (PFNA)	ND	1.8		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:52	JFC
Perfluorodecanoic acid (PFDA)	ND	1.8		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:52	JFC
N-EtFOSAA	ND	1.8		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:52	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.8		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:52	JFC
N-MeFOSAA	ND	1.8		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:52	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.8		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:52	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	1.8		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:52	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.8		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:52	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.8		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:52	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.8		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:52	JFC
9Cl-PF3ONS (F53B Major)	ND	1.8		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:52	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:52	JFC
Surrogates		% Recovery		Recovery Limits		Flag/Qual				
13C-PFHxA		101		70-130					11/19/21 12:52	
M3HFPO-DA		99.7		70-130					11/19/21 12:52	
13C-PFDA		104		70-130					11/19/21 12:52	
d5-NEtFOSAA		104		70-130					11/19/21 12:52	

Project Location: 11 Gregory Hill

Sample Description:

Work Order: 21K1046

Date Received: 11/16/2021

Field Sample #: TB-11112021

Sampled: 11/11/2021 00:00

Sample ID: 21K1046-02

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:59	JFC
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:59	JFC
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:59	JFC
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:59	JFC
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:59	JFC
Perfluorooctanesulfonic acid (PFOS)	ND	1.9		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:59	JFC
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:59	JFC
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:59	JFC
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:59	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:59	JFC
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:59	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:59	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:59	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:59	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:59	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:59	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:59	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	11/18/21	11/19/21 12:59	JFC
Surrogates		% Recovery		Recovery Limits		Flag/Qual				
13C-PFHxA		102		70-130					11/19/21 12:59	
M3HFPO-DA		103		70-130					11/19/21 12:59	
13C-PFDA		104		70-130					11/19/21 12:59	
d5-NEtFOSAA		109		70-130					11/19/21 12:59	

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21K1046-01 [11 Gregoy Hill]	B294950	274	1.00	11/18/21
21K1046-02 [TB-11112021]	B294950	268	1.00	11/18/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B294950 - EPA 537.1										
Blank (B294950-BLK1)										
Prepared: 11/18/21 Analyzed: 11/19/21										
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	38.1		ng/L	37.1		103	70-130			
Surrogate: M3HFPO-DA	37.7		ng/L	37.1		102	70-130			
Surrogate: 13C-PFDA	38.1		ng/L	37.1		103	70-130			
Surrogate: d5-NEtFOSAA	160		ng/L	148		108	70-130			
LCS (B294950-BS1)										
Prepared: 11/18/21 Analyzed: 11/19/21										
Perfluorobutanesulfonic acid (PFBS)	20.7	1.9	ng/L	16.5		126	70-130			
Perfluorohexanoic acid (PFHxA)	18.5	1.9	ng/L	18.6		99.6	70-130			
Perfluorohexanesulfonic acid (PFHxS)	20.4	1.9	ng/L	17.0		120	70-130			
Perfluoroheptanoic acid (PFHpA)	19.3	1.9	ng/L	18.6		104	70-130			
Perfluorooctanoic acid (PFOA)	19.7	1.9	ng/L	18.6		106	70-130			
Perfluorooctanesulfonic acid (PFOS)	18.2	1.9	ng/L	17.2		105	70-130			
Perfluorononanoic acid (PFNA)	20.8	1.9	ng/L	18.6		112	70-130			
Perfluorodecanoic acid (PFDA)	20.5	1.9	ng/L	18.6		110	70-130			
N-EtFOSAA	20.4	1.9	ng/L	18.6		110	70-130			
Perfluoroundecanoic acid (PFUnA)	21.1	1.9	ng/L	18.6		113	70-130			
N-MeFOSAA	18.6	1.9	ng/L	18.6		100	70-130			
Perfluorododecanoic acid (PFDoA)	19.2	1.9	ng/L	18.6		104	70-130			
Perfluorotridecanoic acid (PFTTrDA)	19.0	1.9	ng/L	18.6		102	70-130			
Perfluorotetradecanoic acid (PFTA)	18.6	1.9	ng/L	18.6		99.9	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	21.9	1.9	ng/L	18.6		118	70-130			
11Cl-PF3OUdS (F53B Minor)	21.5	1.9	ng/L	17.5		123	70-130			
9Cl-PF3ONS (F53B Major)	21.7	1.9	ng/L	17.3		125	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	20.0	1.9	ng/L	17.6		114	70-130			
Surrogate: 13C-PFHxA	42.0		ng/L	37.2		113	70-130			
Surrogate: M3HFPO-DA	42.0		ng/L	37.2		113	70-130			
Surrogate: 13C-PFDA	42.4		ng/L	37.2		114	70-130			
Surrogate: d5-NEtFOSAA	163		ng/L	149		110	70-130			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B294950 - EPA 537.1										
LCS Dup (B294950-BSD1)										
					Prepared: 11/18/21 Analyzed: 11/19/21					
Perfluorobutanesulfonic acid (PFBS)	18.5	1.8	ng/L	16.1		115	70-130	11.1	30	
Perfluorohexanoic acid (PFHxA)	16.8	1.8	ng/L	18.1		93.0	70-130	9.48	30	
Perfluorohexanesulfonic acid (PFHxS)	19.0	1.8	ng/L	16.6		115	70-130	7.01	30	
Perfluoroheptanoic acid (PFHpA)	17.5	1.8	ng/L	18.1		96.4	70-130	9.97	30	
Perfluorooctanoic acid (PFOA)	18.0	1.8	ng/L	18.1		99.4	70-130	8.91	30	
Perfluorooctanesulfonic acid (PFOS)	16.2	1.8	ng/L	16.8		96.4	70-130	11.4	30	
Perfluorononanoic acid (PFNA)	18.1	1.8	ng/L	18.1		99.7	70-130	14.0	30	
Perfluorodecanoic acid (PFDA)	18.5	1.8	ng/L	18.1		102	70-130	10.2	30	
N-EtFOSAA	19.4	1.8	ng/L	18.1		107	70-130	4.88	30	
Perfluoroundecanoic acid (PFUnA)	19.5	1.8	ng/L	18.1		108	70-130	7.63	30	
N-MeFOSAA	18.1	1.8	ng/L	18.1		100	70-130	2.84	30	
Perfluorododecanoic acid (PFDoA)	17.2	1.8	ng/L	18.1		94.9	70-130	11.3	30	
Perfluorotridecanoic acid (PFTrDA)	17.2	1.8	ng/L	18.1		94.8	70-130	10.2	30	
Perfluorotetradecanoic acid (PFTA)	17.4	1.8	ng/L	18.1		95.9	70-130	6.63	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	19.9	1.8	ng/L	18.1		110	70-130	9.56	30	
11Cl-PF3OUdS (F53B Minor)	18.7	1.8	ng/L	17.1		110	70-130	13.8	30	
9Cl-PF3ONS (F53B Major)	19.8	1.8	ng/L	16.9		117	70-130	9.49	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	18.2	1.8	ng/L	17.1		106	70-130	9.32	30	
Surrogate: 13C-PFHxA	35.7		ng/L	36.2		98.6	70-130			
Surrogate: M3HFPO-DA	36.4		ng/L	36.2		100	70-130			
Surrogate: 13C-PFDA	35.8		ng/L	36.2		98.9	70-130			
Surrogate: d5-NEtFOSAA	148		ng/L	145		102	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 LR Lionel Rios
 JFC James F. Constantino
 JLH Jessica L. Hoffman
 BAA Bonita A. Abanulo

CONTINUING CALIBRATION CHECK

EPA 537.1

S065577-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	444	464	1.26663	1.227568		4.5	30
Perfluorohexanoic acid (PFHxA)	A	500	439	0.6373755	0.6308853		-12.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	553	0.8570338	0.9230461		20.9	30
Perfluoroheptanoic acid (PFHpA)	A	500	437	0.3431782	0.3396792		-12.6	30
Perfluorooctanoic acid (PFOA)	A	500	538	0.846721	1.000541		7.6	30
Perfluorooctanesulfonic acid (PFOS)	A	464	468	0.8632153	0.9148401		1.0	30
Perfluorononanoic acid (PFNA)	A	500	580	1.003992	1.238297		16.1	30
Perfluorodecanoic acid (PFDA)	A	500	552	0.8136723	0.9516036		10.4	30
N-EtFOSAA	A	500	487	1.154438	1.134646		-2.5	30
Perfluoroundecanoic acid (PFUnA)	A	500	563	0.6828873	0.7598226		12.5	30
N-MeFOSAA	A	500	479	1.358612	1.39658		-4.2	30
Perfluorododecanoic acid (PFDoA)	A	500	469	0.6742663	0.6991332		-6.1	30
Perfluorotridecanoic acid (PFTrDA)	A	500	480	0.8679221	0.900855		-4.0	30
Perfluorotetradecanoic acid (PFTA)	A	500	447	0.7941859	0.7785593		-10.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	519	6.076069E-02	5.616865E-02		3.8	30
11Cl-PF3OUdS (F53B Minor)	A	472	469	1.753442	1.614913		-0.5	30
9Cl-PF3ONS (F53B Major)	A	466	543	3.724904	3.924614		16.5	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	494	1.095174	1.073991		4.6	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S065577-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2510	1.26663	1.346627		13.0	30
Perfluorohexanoic acid (PFHxA)	A	2500	2370	0.6373755	0.681609		-5.1	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2720	0.8570338	0.92493		19.3	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2380	0.3431782	0.3695959		-4.9	30
Perfluorooctanoic acid (PFOA)	A	2500	2510	0.846721	0.9345992		0.5	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2180	0.8632153	0.8517419		-6.0	30
Perfluorononanoic acid (PFNA)	A	2500	2710	1.003992	1.158404		8.6	30
Perfluorodecanoic acid (PFDA)	A	2500	2680	0.8136723	0.925902		7.4	30
N-EtFOSAA	A	2500	2690	1.154438	1.253739		7.7	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2770	0.6828873	0.7495699		11.0	30
N-MeFOSAA	A	2500	2430	1.358612	1.415595		-2.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2490	0.6742663	0.7407692		-0.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2460	0.8679221	0.9246355		-1.5	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2460	0.7941859	0.8576032		-1.6	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	3060	6.076069E-02	6.760576E-02		22.3	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2680	1.753442	1.869686		13.4	30
9Cl-PF3ONS (F53B Major)	A	2330	2760	3.724904	4.057699		18.5	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2750	1.095174	1.214307		16.7	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S065577-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21900	1.26663	1.332553		-1.1	30
Perfluorohexanoic acid (PFHxA)	A	25000	23800	0.6373755	0.6845515		-4.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	22500	0.8570338	0.872549		-1.2	30
Perfluoroheptanoic acid (PFHpA)	A	25000	24300	0.3431782	0.3778848		-2.7	30
Perfluorooctanoic acid (PFOA)	A	25000	24300	0.846721	0.9036427		-2.8	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	22300	0.8632153	0.8697261		-4.0	30
Perfluorononanoic acid (PFNA)	A	25000	24800	1.003992	1.058585		-0.8	30
Perfluorodecanoic acid (PFDA)	A	25000	24600	0.8136723	0.8477601		-1.7	30
N-EtFOSAA	A	25000	25200	1.154438	1.174113		0.8	30
Perfluoroundecanoic acid (PFUnA)	A	25000	25800	0.6828873	0.6967775		3.2	30
N-MeFOSAA	A	25000	24700	1.358612	1.439716		-1.3	30
Perfluorododecanoic acid (PFDoA)	A	25000	24600	0.6742663	0.7324838		-1.7	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	23400	0.8679221	0.8780873		-6.4	30
Perfluorotetradecanoic acid (PFTA)	A	25000	24100	0.7941859	0.8411802		-3.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	27600	6.076069E-02	7.380757E-02		10.6	30
11Cl-PF3OUdS (F53B Minor)	A	23600	23100	1.753442	1.836005		-2.2	30
9Cl-PF3ONS (F53B Major)	A	23300	23700	3.724904	4.027212		1.5	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	23600	1.095174	1.17367		0.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

CHAIN OF CUSTODY RECORD

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
Address: Tighe & Bond
 120 Front Street, Worcester, MA 01610
Phone: 508-754-2201
Project Location: Princeton Private Well Sampling
 Princeton, MA
Project Number: P-0514017
Project Manager: Jeff Arps/Michael Scherer
Pace Analytical Quote Name/Number:
Invoice Recipient: Tighe & Bond
Sampled By: M Scherer

7-Day **10-Day** **Field Filtered**
PFAS 10-Day (std) **Due Date:** **Lab to Filter**
1-Day **3-Day** **Field Filtered**
2-Day **4-Day** **Lab to Filter**

Format: PDF EXCEL
Other: SOXHLET
 CLP Like Data Pkg Required:
Email To: mjscherer@tighebond.com
Fax To #: NON SOXHLET

ANALYSIS REQUESTED

Pace Analytical Work Order #	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP / GRAB	Matrix Code	Circ Code	VIALS				PFAS 527.1	Preservation Code	
							GLASS	PLASTIC	BACTERIA	ENCORE			
1	11 G-2600 of Hill	10/11/21	09:45	GRAB	DW	U							
2	TB-11112021												

Client Comments: *Read to report the 12 components*

Relinquished by (signature): *[Signature]* **Date/Time:** 10/11/21 15:03
Received by (signature): *[Signature]* **Date/Time:** 11/16/21 9am
Relinquished by (signature): *[Signature]* **Date/Time:** 11/16/21 6:05
Received by (signature): *[Signature]* **Date/Time:** 11-16-21
Relinquished by (signature): *[Signature]* **Date/Time:**
Received by (signature): *[Signature]* **Date/Time:**

Special Requirements:
 MA MCP Required
 MCP Certification Form Required
 CT RCP Required
 RCP Certification Form Required
 MA State DW Required

Project Entity:
 Government Municipality
 Federal 21 J
 City Brownfield

Other:
 WRTA Chromatogram
 MWRA School
 School MBTA
 MBTA

6 Comments:
 Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 - Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T+B

Received By CR Date 11-16-21 Time 1805

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 5 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____

Is there enough Volume? T

Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? T On COC? T
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

P-0534
November 24, 2021

Steven Lilburn
Carrie Phillips
13 Gregory Hill Road
Princeton, Massachusetts 01541

Re: **Residential Well Sampling**
13 Gregory Hill Road, Princeton

Dear Mr. Lilburn and Ms. Phillips:

Enclosed is a copy of the laboratory analytical results for the water sample collected from the residential well located at 13 Gregory Hill Road as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the residential well water sample on October 24, 2021, and Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts analyzed the samples for per- and polyfluoroalkyl substances (PFAS). Con Test is a Massachusetts-certified environmental laboratory.

A copy of the lab report is attached to this letter. Analytical results have been compared to MassDEP's drinking water Maximum Contaminant Level (MCL) of 20 nanograms per liter (ng/L), or parts per trillion (ppt), for the combined total of six specific PFAS compounds (PFAS6).

Your laboratory results indicate that the PFAS6 concentration was reported at 4.1 ng/L in the water samples collected on October 24, 2021, which is below the MassDEP MCL of 20 ng/L. Because of this detection, you will be receiving bottled water from the Town.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, with any questions.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup





Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____
2. MCP phase of work during which the sampling will be/has been conducted:
- | | |
|--|---|
| Immediate Response Action | Phase III Feasibility Evaluation |
| Release Abatement Measure | Phase IV Remedy Implementation Plan |
| Utility-related Abatement Measure | Phase V/Remedy Operation Status |
| Phase I Initial Site Investigation | Post-Temporary Solution Operation, Maintenance and Monitoring |
| Phase II Comprehensive Site Assessment | Other _____ |
- (specify)
3. Description of property where sampling will be/has been conducted:
residential commercial industrial school/playground Other _____
(specify)
4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

-

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	13 Gregory Hill Road						
		UNKNOWN						
		1/22/2020	5/29/2020		10/1/2020	1/19/2021	4/21/2021	10/14/2021
Well Depth (feet)				DUPLICATE				
Sampling Date								
EPA 537.1 (ng/L)								
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	1.9
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	2.2
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	4.1
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	4.1

NOTES:
Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
ND = Not detected above the lab reporting limits shown in parentheses.
Bolded values exceed the proposed Method 1 Standard
MMCL is Massachusetts Maximum Contaminant Level

October 25, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

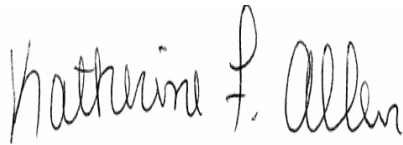
Project Location: 13 Gregory Hill, Worcester, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1051

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/25/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1051

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 13 Gregory Hill, Worcester, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
13 Gregory Hill	21J1051-01	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 13 Gregory Hill, Worcester, MA

Sample Description:

Work Order: 21J1051

Date Received: 10/19/2021

Field Sample #: 13 Gregory Hill

Sampled: 10/14/2021 12:00

Sample ID: 21J1051-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:28	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:28	BLH
Perfluorohexanesulfonic acid (PFHxS)	1.9	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:28	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:28	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:28	BLH
Perfluorooctanesulfonic acid (PFOS)	2.2	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:28	BLH
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:28	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:28	BLH
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:28	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:28	BLH
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:28	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:28	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:28	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:28	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:28	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:28	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:28	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:28	BLH
Surrogates		% Recovery		Recovery Limits		Flag/Qual				
13C-PFHxA		78.2		70-130					10/21/21 20:28	
M3HFPO-DA		75.4		70-130					10/21/21 20:28	
13C-PFDA		94.9		70-130					10/21/21 20:28	
d5-NEtFOSAA		89.4		70-130					10/21/21 20:28	

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1051-01 [13 Gregory Hill]	B292840	260	1.00	10/20/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292840 - EPA 537.1										
Blank (B292840-BLK1)										
Prepared: 10/20/21 Analyzed: 10/21/21										
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	36.4		ng/L	38.8		93.9	70-130			
Surrogate: M3HFPO-DA	37.1		ng/L	38.8		95.5	70-130			
Surrogate: 13C-PFDA	36.5		ng/L	38.8		94.0	70-130			
Surrogate: d5-NEtFOSAA	140		ng/L	155		90.1	70-130			
LCS (B292840-BS1)										
Prepared: 10/20/21 Analyzed: 10/21/21										
Perfluorobutanesulfonic acid (PFBS)	7.49	1.9	ng/L	8.53		87.7	70-130			
Perfluorohexanoic acid (PFHxA)	8.83	1.9	ng/L	9.62		91.8	70-130			
Perfluorohexanesulfonic acid (PFHxS)	8.40	1.9	ng/L	8.79		95.6	70-130			
Perfluoroheptanoic acid (PFHpA)	8.53	1.9	ng/L	9.62		88.7	70-130			
Perfluorooctanoic acid (PFOA)	8.74	1.9	ng/L	9.62		90.9	70-130			
Perfluorooctanesulfonic acid (PFOS)	8.36	1.9	ng/L	8.93		93.6	70-130			
Perfluorononanoic acid (PFNA)	8.50	1.9	ng/L	9.62		88.3	70-130			
Perfluorodecanoic acid (PFDA)	9.36	1.9	ng/L	9.62		97.3	70-130			
N-EtFOSAA	8.02	1.9	ng/L	9.62		83.4	70-130			
Perfluoroundecanoic acid (PFUnA)	9.18	1.9	ng/L	9.62		95.5	70-130			
N-MeFOSAA	7.98	1.9	ng/L	9.62		83.0	70-130			
Perfluorododecanoic acid (PFDoA)	8.78	1.9	ng/L	9.62		91.3	70-130			
Perfluorotridecanoic acid (PFTTrDA)	8.24	1.9	ng/L	9.62		85.6	70-130			
Perfluorotetradecanoic acid (PFTA)	7.81	1.9	ng/L	9.62		81.2	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	8.51	1.9	ng/L	9.62		88.5	70-130			
11Cl-PF3OUdS (F53B Minor)	7.76	1.9	ng/L	9.07		85.6	70-130			
9Cl-PF3ONS (F53B Major)	7.85	1.9	ng/L	8.98		87.5	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	8.22	1.9	ng/L	9.09		90.4	70-130			
Surrogate: 13C-PFHxA	37.6		ng/L	38.5		97.8	70-130			
Surrogate: M3HFPO-DA	38.3		ng/L	38.5		99.7	70-130			
Surrogate: 13C-PFDA	38.2		ng/L	38.5		99.2	70-130			
Surrogate: d5-NEtFOSAA	147		ng/L	154		95.7	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m ³	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JFC James F. Constantino
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BB2 Bethany M Bisnett

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2250	1.135859	1.175661		1.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2270	0.7557946	0.7128042		-9.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2210	0.9172992	0.9026665		-2.9	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2160	0.5186879	0.4819864		-13.7	30
Perfluorooctanoic acid (PFOA)	A	2500	2650	1.014466	1.07518		6.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2450	0.9546162	1.024945		5.4	30
Perfluorononanoic acid (PFNA)	A	2500	2550	0.8583182	0.9147195		1.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2710	0.9883469	1.105104		8.5	30
N-EtFOSAA	A	2500	2530	0.8211978	0.9177848		1.2	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2800	1.00186	1.134988		11.9	30
N-MeFOSAA	A	2500	2460	0.9767918	1.045588		-1.8	30
Perfluorododecanoic acid (PFDoA)	A	2500	2650	1.175679	1.305484		6.0	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2720	1.152766	1.336643		8.6	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2640	0.9718999	1.117673		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2420	1.628033E-02	1.622857E-02		-3.3	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2370	1.429084	1.580493		0.4	30
9Cl-PF3ONS (F53B Major)	A	2330	2380	2.949299	3.33391		2.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2240	1.373201	1.369497		-5.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	23000	1.135859	1.204066		3.8	30
Perfluorohexanoic acid (PFHxA)	A	25000	26700	0.7557946	0.8400239		6.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	24500	0.9172992	0.9985564		7.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	26100	0.5186879	0.5836485		4.5	30
Perfluorooctanoic acid (PFOA)	A	25000	26800	1.014466	1.086907		7.4	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	24700	0.9546162	1.034115		6.4	30
Perfluorononanoic acid (PFNA)	A	25000	26700	0.8583182	0.958436		6.8	30
Perfluorodecanoic acid (PFDA)	A	25000	28400	0.9883469	1.157711		13.7	30
N-EtFOSAA	A	25000	26200	0.8211978	0.8869809		4.8	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27700	1.00186	1.125429		10.9	30
N-MeFOSAA	A	25000	26500	0.9767918	1.0947		6.1	30
Perfluorododecanoic acid (PFDoA)	A	25000	27800	1.175679	1.371556		11.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	28400	1.152766	1.396505		13.5	30
Perfluorotetradecanoic acid (PFTA)	A	25000	28000	0.9718999	1.184497		12.0	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25700	1.628033E-02	1.727919E-02		2.9	30
11Cl-PF3OUdS (F53B Minor)	A	23600	27200	1.429084	1.756578		15.1	30
9Cl-PF3ONS (F53B Major)	A	23300	26100	2.949299	3.549062		12.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	25000	1.373201	1.528624		6.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2240	1.135859	1.169424		0.8	30
Perfluorohexanoic acid (PFHxA)	A	2500	2580	0.7557946	0.8109661		3.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2350	0.9172992	0.9588437		3.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2450	0.5186879	0.5468278		-2.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2630	1.014466	1.06544		5.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2370	0.9546162	0.992586		2.1	30
Perfluorononanoic acid (PFNA)	A	2500	2530	0.8583182	0.9099244		1.4	30
Perfluorodecanoic acid (PFDA)	A	2500	2820	0.9883469	1.147251		12.7	30
N-EtFOSAA	A	2500	2470	0.8211978	0.8944513		-1.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2840	1.00186	1.15277		13.6	30
N-MeFOSAA	A	2500	2430	0.9767918	1.036022		-2.7	30
Perfluorododecanoic acid (PFDoA)	A	2500	2670	1.175679	1.314604		6.7	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2720	1.152766	1.339952		8.9	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2720	0.9718999	1.152383		9.0	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2470	1.628033E-02	0.0166028		-1.1	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2400	1.429084	1.601682		1.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2340	2.949299	3.284328		0.5	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2450	1.373201	1.49829		4.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21600	1.135859	1.127881		-2.8	30
Perfluorohexanoic acid (PFHxA)	A	25000	26800	0.7557946	0.843118		7.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	24000	0.9172992	0.978684		5.2	30
Perfluoroheptanoic acid (PFHpA)	A	25000	26500	0.5186879	0.5925618		6.1	30
Perfluorooctanoic acid (PFOA)	A	25000	27000	1.014466	1.091847		7.8	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	24200	0.9546162	1.015027		4.4	30
Perfluorononanoic acid (PFNA)	A	25000	26900	0.8583182	0.9668927		7.7	30
Perfluorodecanoic acid (PFDA)	A	25000	28300	0.9883469	1.151287		13.1	30
N-EtFOSAA	A	25000	26300	0.8211978	0.8902964		5.2	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27800	1.00186	1.127115		11.1	30
N-MeFOSAA	A	25000	26300	0.9767918	1.083849		5.0	30
Perfluorododecanoic acid (PFDoA)	A	25000	27700	1.175679	1.364352		10.8	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	28200	1.152766	1.387405		12.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27700	0.9718999	1.172784		10.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25800	1.628033E-02	1.735632E-02		3.4	30
11Cl-PF3OUdS (F53B Minor)	A	23600	26000	1.429084	1.683193		10.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25500	2.949299	3.47103		9.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	25200	1.373201	1.537678		6.7	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

2151051

Phone: 612-607-6400
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Pace Analytical

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
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 120 Front Street, Worcester, MA 01610
 Phone: 508-754-2201
 Princeton Private Well Sampling
 Princeton, MA
 Project Number: P-0534017
 Project Manager: Jeff Alps/Michael Scherer
 Pace Analytical Quote Name/Number
 Invoice Recipient:
 Sampled By: M. Scherer

1800 Elm Street SE
Minneapolis, MN 55414

Doc # 381 Rev 4_01/08/2020

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CHAIN OF CUSTODY RECORD

7-Day 10-Day Due Date:
 PRAS 10-Day (std)
 1-Day 3-Day
 2-Day 4-Day
 Format: PDF EXCEL
 Other: SOXHLET
 CLP Like Data Pkg Required:
 Email To: mjscherer@tighetbond.com
 Fax To #:

Pace Analytical Work Order #	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP / GRAB	Matrix Code	Conc Code
	13 GARDENY Hill	10/19/21	10/19/21	GRAB	DW	U

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
	10/14/21 150		10/15/21
	10/19/21		10/19/21
	10/20/21 1550		10/20/21 1550

Client comments: Please report the 14 compound list

Special Requirements:
 MA MCP Required
 MCP Certification Form Required
 CT RCP Required
 RCP Certification Form Required
 MA State DW Required
 Project Entity: Government Municipality 21 J
 Federal School MBTA
 City Brownfield
 WRTA
 Chromatogram
 AIHA-LAP, LLC

ANALYSIS REQUESTED

Preservation Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
GW = Ground Water WW = Waste Water DW = Drinking Water A = Air S = Soil SL = Sludge SOL = Solid O = Other (please define)																					

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T E B
 Received By EL Date 10/19/11 Time 1550
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

P-0534
November 29, 2021

Brett and Ashley Gibbs
14 Gregory Hill Road
Princeton, Massachusetts 01541

Re: **Residential Well Sampling**
14 Gregory Hill Road, Princeton

Dear Mr. and Mrs. Gibbs:

Enclosed is a copy of the laboratory analytical results for the water sample collected from the residential well located at 14 Gregory Hill Road as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the residential well water sample on October 14, 2021, and Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts analyzed the sample for per- and polyfluoroalkyl substances (PFAS). Con Test is a Massachusetts-certified environmental laboratory.

Your laboratory results indicate that the PFAS6 concentration is 24.8 ng/L in the water sample collected on October 14, 2021, which is above the MassDEP MCL of 20 ng/L.

Based on the PFAS concentration detected in your well, MassDEP has determined that your water supply should not be used in the long-term without treatment. Therefore, MassDEP is requiring the Town of Princeton to provide you with bottled water temporarily while we work with you to install a point-of-entry treatment (POET) system that will remove PFAS from your well water. This system will be sampled within the first month of operation and on an annual basis thereafter.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, if you wish to discuss this information.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

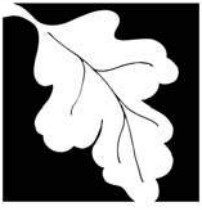
1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____
2. MCP phase of work during which the sampling will be/has been conducted:
- | | |
|--|---|
| Immediate Response Action | Phase III Feasibility Evaluation |
| Release Abatement Measure | Phase IV Remedy Implementation Plan |
| Utility-related Abatement Measure | Phase V/Remedy Operation Status |
| Phase I Initial Site Investigation | Post-Temporary Solution Operation, Maintenance and Monitoring |
| Phase II Comprehensive Site Assessment | Other _____ |
- (specify)
3. Description of property where sampling will be/has been conducted:
residential commercial industrial school/playground Other _____
(specify)
4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

-

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	14 Gregory Hill Rd					
		UNKNOWN					
		1/9/2020	5/29/2020	10/1/2020	1/20/2021	4/20/2021	10/14/2021
Well Depth (feet)							
Sampling Date							
<i>EPA 537.1 (ng/L)</i>							
Perfluorobutanesulfonic acid (PFBS)		2.6	2.9	3.6	2.7	3.9	3.7
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	2.7	2.7	2.2	3.4
Perfluorohexanesulfonic acid (PFHxS)		3.7	5.2	11	4.4	7.6	14
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		3.2	3.4	3.6	2.2	3.4	6
Perfluorooctanesulfonic acid (PFOS)		2.5	2.7	3.7	ND (2.0)	2.7	4.8
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		12	14.2	21.9	9.3	17.6	31.9
Regulated Total	20	9.4	11.3	18.3	6.6	13.7	24.8

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

October 27, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

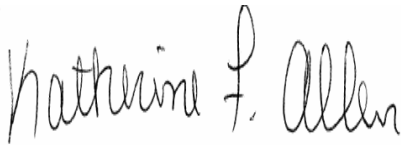
Project Location: 14 Gregory Hill, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1147

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/27/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1147

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 14 Gregory Hill, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
14 Gregory Hill	21J1147-01	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative

Project Location: 14 Gregory Hill, Princeton, MA

Sample Description:

Work Order: 21J1147

Date Received: 10/19/2021

Field Sample #: 14 Gregory Hill

Sampled: 10/14/2021 12:00

Sample ID: 21J1147-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date	Date/Time	Analyst
			MA ORSG						Prepared	Analyzed	
Perfluorobutanesulfonic acid (PFBS)	3.7	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 12:37	BLH
Perfluorohexanoic acid (PFHxA)	3.4	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 12:37	BLH
Perfluorohexanesulfonic acid (PFHxS)	14	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 12:37	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 12:37	BLH
Perfluorooctanoic acid (PFOA)	6.0	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 12:37	BLH
Perfluorooctanesulfonic acid (PFOS)	4.8	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 12:37	BLH
Perfluorononanoic acid (PFNA)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 12:37	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 12:37	BLH
N-EtFOSAA	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 12:37	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 12:37	BLH
N-MeFOSAA	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 12:37	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 12:37	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 12:37	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 12:37	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 12:37	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 12:37	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 12:37	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9			ng/L	1		EPA 537.1	10/22/21	10/26/21 12:37	BLH
Surrogates			% Recovery		Recovery Limits		Flag/Qual				
13C-PFHxA			111		70-130					10/26/21 12:37	
M3HFPO-DA			107		70-130					10/26/21 12:37	
13C-PFDA			113		70-130					10/26/21 12:37	
d5-NEtFOSAA			122		70-130					10/26/21 12:37	

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1147-01 [14 Gregory Hill]	B292862	265	1.00	10/22/21

QUALITY CONTROL

Semivolatle Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292862 - EPA 537.1										
Blank (B292862-BLK1)										
Prepared: 10/22/21 Analyzed: 10/26/21										
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	43.8		ng/L	37.3		117	70-130			
Surrogate: M3HFPO-DA	43.4		ng/L	37.3		116	70-130			
Surrogate: 13C-PFDA	37.9		ng/L	37.3		102	70-130			
Surrogate: d5-NEtFOSAA	170		ng/L	149		114	70-130			
LCS (B292862-BS1)										
Prepared: 10/22/21 Analyzed: 10/26/21										
Perfluorobutanesulfonic acid (PFBS)	15.8	1.9	ng/L	16.5		95.7	70-130			
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.6	70-130			
Perfluorohexanesulfonic acid (PFHxS)	17.0	1.9	ng/L	17.0		99.8	70-130			
Perfluoroheptanoic acid (PFHpA)	16.3	1.9	ng/L	18.6		87.6	70-130			
Perfluorooctanoic acid (PFOA)	17.6	1.9	ng/L	18.6		94.7	70-130			
Perfluorooctanesulfonic acid (PFOS)	15.8	1.9	ng/L	17.2		91.4	70-130			
Perfluorononanoic acid (PFNA)	15.4	1.9	ng/L	18.6		83.1	70-130			
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130			
N-EtFOSAA	17.4	1.9	ng/L	18.6		93.6	70-130			
Perfluoroundecanoic acid (PFUnA)	17.8	1.9	ng/L	18.6		95.7	70-130			
N-MeFOSAA	17.3	1.9	ng/L	18.6		93.2	70-130			
Perfluorododecanoic acid (PFDoA)	17.7	1.9	ng/L	18.6		95.2	70-130			
Perfluorotridecanoic acid (PFTTrDA)	17.2	1.9	ng/L	18.6		92.4	70-130			
Perfluorotetradecanoic acid (PFTA)	17.4	1.9	ng/L	18.6		93.8	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.3	1.9	ng/L	18.6		93.1	70-130			
11Cl-PF3OUdS (F53B Minor)	18.0	1.9	ng/L	17.5		103	70-130			
9Cl-PF3ONS (F53B Major)	17.9	1.9	ng/L	17.3		103	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.8	1.9	ng/L	17.6		95.4	70-130			
Surrogate: 13C-PFHxA	41.0		ng/L	37.2		110	70-130			
Surrogate: M3HFPO-DA	40.4		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.9		ng/L	37.2		99.2	70-130			
Surrogate: d5-NEtFOSAA	163		ng/L	149		109	70-130			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292862 - EPA 537.1										
LCS Dup (B292862-BSD1)										
					Prepared: 10/22/21 Analyzed: 10/26/21					
Perfluorobutanesulfonic acid (PFBS)	15.5	1.9	ng/L	16.5		93.8	70-130	1.88	30	
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.7	70-130	0.343	30	
Perfluorohexanesulfonic acid (PFHxS)	17.1	1.9	ng/L	17.0		101	70-130	1.06	30	
Perfluoroheptanoic acid (PFHpA)	16.1	1.9	ng/L	18.6		86.3	70-130	1.32	30	
Perfluorooctanoic acid (PFOA)	17.1	1.9	ng/L	18.6		91.9	70-130	2.72	30	
Perfluorooctanesulfonic acid (PFOS)	15.4	1.9	ng/L	17.3		89.0	70-130	2.44	30	
Perfluorononanoic acid (PFNA)	15.3	1.9	ng/L	18.6		82.0	70-130	1.12	30	
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130	0.149	30	
N-EtFOSAA	17.1	1.9	ng/L	18.6		91.7	70-130	1.81	30	
Perfluoroundecanoic acid (PFUnA)	18.0	1.9	ng/L	18.6		96.5	70-130	1.08	30	
N-MeFOSAA	17.8	1.9	ng/L	18.6		95.6	70-130	2.69	30	
Perfluorododecanoic acid (PFDoA)	17.3	1.9	ng/L	18.6		92.9	70-130	2.31	30	
Perfluorotridecanoic acid (PFTrDA)	17.3	1.9	ng/L	18.6		92.9	70-130	0.701	30	
Perfluorotetradecanoic acid (PFTA)	17.1	1.9	ng/L	18.6		92.0	70-130	1.83	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.1	1.9	ng/L	18.6		91.9	70-130	1.05	30	
11Cl-PF3OUdS (F53B Minor)	17.8	1.9	ng/L	17.6		101	70-130	1.35	30	
9Cl-PF3ONS (F53B Major)	17.6	1.9	ng/L	17.4		101	70-130	2.07	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.7	1.9	ng/L	17.6		95.1	70-130	0.145	30	
Surrogate: 13C-PFHxA	40.7		ng/L	37.2		109	70-130			
Surrogate: M3HFPO-DA	40.5		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.7		ng/L	37.2		98.5	70-130			
Surrogate: d5-NEtFOSAA	166		ng/L	149		111	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BAA Bonita A. Abanulo

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	444	442	1.205187	1.224447		-0.5	30
Perfluorohexanoic acid (PFHxA)	A	500	493	0.7174549	0.7339039		-1.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	467	0.9422487	0.9997435		2.2	30
Perfluoroheptanoic acid (PFHpA)	A	500	429	0.5131844	0.4640475		-14.1	30
Perfluorooctanoic acid (PFOA)	A	500	551	1.018894	1.158365		10.3	30
Perfluorooctanesulfonic acid (PFOS)	A	464	478	0.9862048	1.021105		2.9	30
Perfluorononanoic acid (PFNA)	A	500	412	0.9556153	0.8088272		-17.6	30
Perfluorodecanoic acid (PFDA)	A	500	480	1.019289	1.029208		-4.1	30
N-EtFOSAA	A	500	483	0.7469728	0.748993		-3.4	30
Perfluoroundecanoic acid (PFUnA)	A	500	522	0.9840387	1.060965		4.3	30
N-MeFOSAA	A	500	507	0.9030075	0.9168343		1.3	30
Perfluorododecanoic acid (PFDoA)	A	500	500	1.153654	1.231809		0.07	30
Perfluorotridecanoic acid (PFTrDA)	A	500	453	1.231259	1.166599		-9.4	30
Perfluorotetradecanoic acid (PFTA)	A	500	467	1.033649	1.001868		-6.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	549	1.481833E-02	1.651154E-02		9.8	30
11Cl-PF3OUdS (F53B Minor)	A	472	474	1.641038	1.639428		0.3	30
9Cl-PF3ONS (F53B Major)	A	466	466	3.518141	3.5012		0.09	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	446	1.350704	1.324111		-5.5	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2080	1.205187	1.151823		-6.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2450	0.7174549	0.7276259		-2.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2280	0.9422487	0.9796582		0.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2190	0.5131844	0.4730903		-12.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2540	1.018894	1.065353		1.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2240	0.9862048	0.956855		-3.5	30
Perfluorononanoic acid (PFNA)	A	2500	2280	0.9556153	0.8939886		-8.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2470	1.019289	1.059261		-1.3	30
N-EtFOSAA	A	2500	2540	0.7469728	0.78652		1.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2690	0.9840387	1.094937		7.7	30
N-MeFOSAA	A	2500	2470	0.9030075	0.8958022		-1.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2600	1.153654	1.279111		3.9	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2620	1.231259	1.3494		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2650	1.033649	1.137421		5.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2380	1.481833E-02	1.432532E-02		-4.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.710564		4.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2460	3.518141	3.704886		5.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2350	1.350704	1.396409		-0.4	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21900	1.205187	1.212846		-1.4	30
Perfluorohexanoic acid (PFHxA)	A	25000	25800	0.7174549	0.766353		3.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	0.9992528		2.1	30
Perfluoroheptanoic acid (PFHpA)	A	25000	24100	0.5131844	0.520733		-3.6	30
Perfluorooctanoic acid (PFOA)	A	25000	25600	1.018894	1.07771		2.6	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23500	0.9862048	1.003068		1.1	30
Perfluorononanoic acid (PFNA)	A	25000	23800	0.9556153	0.9362592		-4.6	30
Perfluorodecanoic acid (PFDA)	A	25000	25900	1.019289	1.111468		3.6	30
N-EtFOSAA	A	25000	25700	0.7469728	0.768614		3.0	30
Perfluoroundecanoic acid (PFUnA)	A	25000	26700	0.9840387	1.085744		6.7	30
N-MeFOSAA	A	25000	25400	0.9030075	0.9491052		1.7	30
Perfluorododecanoic acid (PFDoA)	A	25000	26600	1.153654	1.308219		6.3	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26200	1.231259	1.349207		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	26400	1.033649	1.134729		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25400	1.481833E-02	1.529015E-02		1.7	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25100	1.641038	1.825779		6.4	30
9Cl-PF3ONS (F53B Major)	A	23300	25000	3.518141	3.980416		7.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24300	1.350704	1.445925		3.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2090	1.205187	1.159763		-5.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2400	0.7174549	0.7136453		-4.1	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2220	0.9422487	0.9521833		-2.7	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2200	0.5131844	0.4751433		-12.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2490	1.018894	1.046674		-0.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	0.9862048	0.9647938		-2.7	30
Perfluorononanoic acid (PFNA)	A	2500	2290	0.9556153	0.897298		-8.6	30
Perfluorodecanoic acid (PFDA)	A	2500	2500	1.019289	1.072089		-0.1	30
N-EtFOSAA	A	2500	2490	0.7469728	0.7685828		-0.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2700	0.9840387	1.099698		8.1	30
N-MeFOSAA	A	2500	2480	0.9030075	0.8993446		-0.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2610	1.153654	1.285782		4.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2540	1.231259	1.306517		1.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2560	1.033649	1.098145		2.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2340	1.481833E-02	1.407048E-02		-6.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.708613		4.2	30
9Cl-PF3ONS (F53B Major)	A	2330	2520	3.518141	3.798072		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2340	1.350704	1.388313		-1.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV5

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	22000	1.205187	1.219675		-0.9	30
Perfluorohexanoic acid (PFHxA)	A	25000	25700	0.7174549	0.7639828		2.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	1.001704		2.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	23800	0.5131844	0.5144887		-4.8	30
Perfluorooctanoic acid (PFOA)	A	25000	25400	1.018894	1.068279		1.7	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23600	0.9862048	1.009655		1.8	30
Perfluorononanoic acid (PFNA)	A	25000	23700	0.9556153	0.9312701		-5.1	30
Perfluorodecanoic acid (PFDA)	A	25000	26200	1.019289	1.125386		4.9	30
N-EtFOSAA	A	25000	26000	0.7469728	0.7756554		3.9	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27400	0.9840387	1.11475		9.6	30
N-MeFOSAA	A	25000	25900	0.9030075	0.9658908		3.4	30
Perfluorododecanoic acid (PFDoA)	A	25000	27400	1.153654	1.347163		9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26900	1.231259	1.383697		7.4	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27100	1.033649	1.164994		8.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	23700	1.481833E-02	1.427195E-02		-5.1	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25800	1.641038	1.874904		9.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25200	3.518141	4.012609		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24000	1.350704	1.426229		1.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

2151147

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
Tighe & Bond
120 Front Street, Worcester, MA 01610
Phone: 508-754-2201
Project Name: Princeton Private Well Sampling
Project Location: Princeton, MA
Project Number: P-0534017
Project Manager: Jeff Apps/Michael Scherer
Pace Analytical Quote Name/Number:
Invoice Recipient:
Sampled By: Tighe & Bond
M. Scherer

Format: PDF EXCEL
Other:
CLP Like Data Pkg Required:
Email To: mischerer@tighebond.com
Fax To #:

SOXHLET
NON SOXHLET
PCB ONLY
Matrix Code: DW
Conc Code: U
Ending Date/Time: 1200
Beginning Date/Time: 10/14/11
Client Sample ID / Description: 14 GREGORY HILL

Retinquished by: (signature)
Date/Time: 10/14/11 1500
Received by: (signature)
Date/Time: 10/15
Retinquished by: (signature)
Date/Time: 10/19/11 1550
Received by: (signature)
Date/Time: 10/19/11 1550
Retinquished by: (signature)
Date/Time:
Received by: (signature)
Date/Time:
Retinquished by: (signature)
Date/Time:
Received by: (signature)
Date/Time:

Special Requirements:
MA MCP Required
MCP Certification Form Required
CT RCP Required
RCP Certification Form Required
MA State DW Required
PWSID #

Project Entity: Government Municipality WRTA WRPRA School City 21 J MBTA MBTA
Other: Chromatogram AIHA-LAP, LLC
Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

1 Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)
2 Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test[®]
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T E B

Received By ML Date 10/19/11 Time 1550

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____

Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

P-0534
November 24, 2021

Jennifer Foss
15 Hubbardston Road
Princeton, Massachusetts 01541

Re: **Residential Well Sampling**
15 Hubbardston Road, Princeton

Dear Ms. Foss:

Enclosed is a copy of the laboratory analytical results for the water samples collected from the residential well system located at 15 Hubbardston Road as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the residential well water samples on October 18, 2021 to monitor the granular activated carbon (GAC) point-of-entry treatment (POET) system that was installed in your home on February 11, 2020. The samples were submitted to Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts, a Massachusetts certified environmental laboratory, for per- and polyfluoroalkyl substances (PFAS) analysis. A copy of the laboratory analytical results for the above-referenced samples are attached to this letter. A copy of the lab report is attached to this letter. Analytical results have been compared to MassDEP's drinking water Maximum Contaminant Level (MCL) of 20 nanograms per liter (ng/L), or parts per trillion (ppt), for the sum of six specific PFAS compounds (PFAS6).

Water quality results indicate that the POET system installed in your home is effectively removing PFAS from your drinking water, as there were no detections in the midfluent or effluent samples. Tighe & Bond will continue to monitor the system in accordance with MassDEP requirements.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, if you have any questions regarding this information.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup





Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

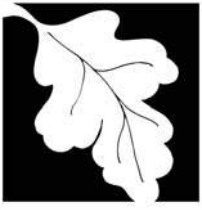
1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____
2. MCP phase of work during which the sampling will be/has been conducted:
- | | |
|--|---|
| Immediate Response Action | Phase III Feasibility Evaluation |
| Release Abatement Measure | Phase IV Remedy Implementation Plan |
| Utility-related Abatement Measure | Phase V/Remedy Operation Status |
| Phase I Initial Site Investigation | Post-Temporary Solution Operation, Maintenance and Monitoring |
| Phase II Comprehensive Site Assessment | Other _____ |
- (specify)
3. Description of property where sampling will be/has been conducted:
residential commercial industrial school/playground Other _____
(specify)
4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

-

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
 POET System Monitoring
 Princeton, Massachusetts
 RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	15 Hubbardston Road															
		-				Not Recorded			3,771			6,855			8,913		
		12/5/2019		2/11/2020		2/26/2020			5/1/2020			6/18/2020			7/30/2020		
		POET INSTALLED		INF		MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	
<i>EPA 537.1 (ng/L)</i>																	
Perfluorobutanesulfonic acid (PFBS)		27		17	ND (2.0)	ND (2.0)	21	ND (2.0)	ND (2.0)	21	ND (2.0)	ND (2.0)	20	ND (2.0)	ND (2.0)		
Perfluorohexanoic acid (PFHxA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluorohexanesulfonic acid (PFHxS)		110		73	ND (2.0)	ND (2.0)	95	ND (2.0)	ND (2.0)	90	ND (2.0)	ND (2.0)	92	ND (2.0)	ND (2.0)		
Perfluoroheptanoic acid (PFHpA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluorooctanoic acid (PFOA)		4.6		3.5	ND (2.0)	ND (2.0)	4.2	ND (2.0)	ND (2.0)	3	ND (2.0)	ND (2.0)	3.9	ND (2.0)	ND (2.0)		
Perfluorooctanesulfonic acid (PFOS)		18		14	ND (2.0)	ND (2.0)	21	ND (2.0)	ND (2.0)	18	ND (2.0)	ND (2.0)	19	ND (2.0)	ND (2.0)		
Perfluorononanoic acid (PFNA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluorodecanoic acid (PFDA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
N-EtFOSAA		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluoroundecanoic acid (PFUnA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
N-MeFOSAA		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluorododecanoic acid (PFDoA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Perfluorotetradecanoic acid (PFTA)		ND (2.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)		
Total (All Compounds)		159.6		107.5	ND (2.0)	ND (2.0)	141.2	ND (2.0)	ND (2.0)	132.0	ND (2.0)	ND (2.0)	134.9	ND (2.0)	ND (2.0)		
Regulated Total	20	132.6		90.5	ND (2.0)	ND (2.0)	120.2	ND (2.0)	ND (2.0)	111.0	ND (2.0)	ND (2.0)	114.9	ND (2.0)	ND (2.0)		

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	15 Hubbardston Road															
		13,958				18,399				22,074				32,037			
		11/6/2020				1/29/2021				4/26/2021				10/18/2021			
		INF		MID		EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF		
<i>EPA 537.1 (ng/L)</i>																	
Perfluorobutanesulfonic acid (PFBS)		21	ND (2.0)	ND (2.0)	27	ND (2.0)	ND (2.0)	16	ND (2.0)	ND (2.0)	16	ND (2.0)	ND (2.0)				
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Perfluorohexanesulfonic acid (PFHxS)		110	ND (2.0)	ND (2.0)	120	ND (2.0)	ND (2.0)	85	ND (2.0)	ND (2.0)	120	ND (2.0)	ND (2.0)				
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Perfluorooctanoic acid (PFOA)		4	ND (2.0)	ND (2.0)	5	ND (2.0)	ND (2.0)	3.8	ND (2.0)	ND (2.0)	4.6	ND (2.0)	ND (2.0)				
Perfluorooctanesulfonic acid (PFOS)		17	ND (2.0)	ND (2.0)	25	ND (2.0)	ND (2.0)	19	ND (2.0)	ND (2.0)	29	ND (2.0)	ND (2.0)				
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)				
Total (All Compounds)		152.0	ND (2.0)	ND (2.0)	177.0	ND (2.0)	ND (2.0)	123.8	ND (2.0)	ND (2.0)	169.6	ND (2.0)	ND (2.0)				
Regulated Total	20	131.0	ND (2.0)	ND (2.0)	150.0	ND (2.0)	ND (2.0)	107.8	ND (2.0)	ND (2.0)	153.6	ND (2.0)	ND (2.0)				

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

October 25, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

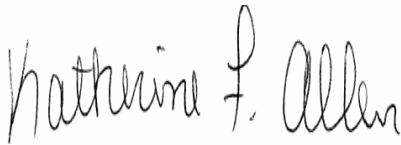
Project Location: 15 Hubbardston, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1138

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/25/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1138

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 15 Hubbardston, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
15 Hubbardston INF	21J1138-01	Drinking Water		EPA 537.1	
15 Hubbardston MID	21J1138-02	Drinking Water		EPA 537.1	
15 Hubbardston EFF	21J1138-03	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 15 Hubbardston, Princeton, MA

Sample Description:

Work Order: 21J1138

Date Received: 10/19/2021

Field Sample #: 15 Hubbardston INF

Sampled: 10/18/2021 12:00

Sample ID: 21J1138-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date	Date/Time	Analyst
			MA	ORSG					Prepared	Analyzed	
Perfluorobutanesulfonic acid (PFBS)	16	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:37	JFC
Perfluorohexanoic acid (PFHxA)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:37	JFC
Perfluorohexanesulfonic acid (PFHxS)	120	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:37	JFC
Perfluoroheptanoic acid (PFHpA)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:37	JFC
Perfluorooctanoic acid (PFOA)	4.6	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:37	JFC
Perfluorooctanesulfonic acid (PFOS)	29	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:37	JFC
Perfluorononanoic acid (PFNA)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:37	JFC
Perfluorodecanoic acid (PFDA)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:37	JFC
N-EtFOSAA	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:37	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:37	JFC
N-MeFOSAA	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:37	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:37	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:37	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:37	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:37	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:37	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:37	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:37	JFC
Surrogates		% Recovery	Recovery Limits				Flag/Qual				
13C-PFHxA		77.4	70-130						10/22/21	12:37	
M3HFPO-DA		70.4	70-130						10/22/21	12:37	
13C-PFDA		91.5	70-130						10/22/21	12:37	
d5-NEtFOSAA		91.9	70-130						10/22/21	12:37	

Project Location: 15 Hubbardston, Princeton, MA

Sample Description:

Work Order: 21J1138

Date Received: 10/19/2021

Field Sample #: 15 Hubbardston MID

Sampled: 10/18/2021 12:00

Sample ID: 21J1138-02

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:54	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:54	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:54	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:54	BLH
Perfluorooctanoic acid (PFOA)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:54	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:54	BLH
Perfluorononanoic acid (PFNA)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:54	BLH
Perfluorodecanoic acid (PFDA)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:54	BLH
N-EtFOSAA	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:54	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:54	BLH
N-MeFOSAA	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:54	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:54	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:54	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:54	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:54	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:54	BLH
9Cl-PF3ONS (F53B Major)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:54	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:54	BLH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
13C-PFHxA	85.3	70-130	10/21/21 21:54
M3HFPO-DA	81.2	70-130	10/21/21 21:54
13C-PFDA	91.9	70-130	10/21/21 21:54
d5-NEtFOSAA	87.9	70-130	10/21/21 21:54



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 15 Hubbardston, Princeton, MA

Sample Description:

Work Order: 21J1138

Date Received: 10/19/2021

Field Sample #: 15 Hubbardston EFF

Sampled: 10/18/2021 12:00

Sample ID: 21J1138-03

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:01	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:01	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:01	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:01	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:01	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:01	BLH
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:01	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:01	BLH
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:01	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:01	BLH
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:01	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:01	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:01	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:01	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:01	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:01	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:01	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:01	BLH
Surrogates		% Recovery		Recovery Limits		Flag/Qual				
13C-PFHxA		86.9		70-130					10/21/21 22:01	
M3HFPO-DA		87.9		70-130					10/21/21 22:01	
13C-PFDA		87.8		70-130					10/21/21 22:01	
d5-NEtFOSAA		85.2		70-130					10/21/21 22:01	

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1138-01 [15 Hubbardston INF]	B292840	268	1.00	10/20/21
21J1138-02 [15 Hubbardston MID]	B292840	274	1.00	10/20/21
21J1138-03 [15 Hubbardston EFF]	B292840	263	1.00	10/20/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B292840 - EPA 537.1

Blank (B292840-BLK1)

Prepared: 10/20/21 Analyzed: 10/21/21

Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	36.4		ng/L	38.8		93.9	70-130			
Surrogate: M3HFPO-DA	37.1		ng/L	38.8		95.5	70-130			
Surrogate: 13C-PFDA	36.5		ng/L	38.8		94.0	70-130			
Surrogate: d5-NEtFOSAA	140		ng/L	155		90.1	70-130			

LCS (B292840-BS1)

Prepared: 10/20/21 Analyzed: 10/21/21

Perfluorobutanesulfonic acid (PFBS)	7.49	1.9	ng/L	8.53		87.7	70-130			
Perfluorohexanoic acid (PFHxA)	8.83	1.9	ng/L	9.62		91.8	70-130			
Perfluorohexanesulfonic acid (PFHxS)	8.40	1.9	ng/L	8.79		95.6	70-130			
Perfluoroheptanoic acid (PFHpA)	8.53	1.9	ng/L	9.62		88.7	70-130			
Perfluorooctanoic acid (PFOA)	8.74	1.9	ng/L	9.62		90.9	70-130			
Perfluorooctanesulfonic acid (PFOS)	8.36	1.9	ng/L	8.93		93.6	70-130			
Perfluorononanoic acid (PFNA)	8.50	1.9	ng/L	9.62		88.3	70-130			
Perfluorodecanoic acid (PFDA)	9.36	1.9	ng/L	9.62		97.3	70-130			
N-EtFOSAA	8.02	1.9	ng/L	9.62		83.4	70-130			
Perfluoroundecanoic acid (PFUnA)	9.18	1.9	ng/L	9.62		95.5	70-130			
N-MeFOSAA	7.98	1.9	ng/L	9.62		83.0	70-130			
Perfluorododecanoic acid (PFDoA)	8.78	1.9	ng/L	9.62		91.3	70-130			
Perfluorotridecanoic acid (PFTTrDA)	8.24	1.9	ng/L	9.62		85.6	70-130			
Perfluorotetradecanoic acid (PFTA)	7.81	1.9	ng/L	9.62		81.2	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	8.51	1.9	ng/L	9.62		88.5	70-130			
11Cl-PF3OUdS (F53B Minor)	7.76	1.9	ng/L	9.07		85.6	70-130			
9Cl-PF3ONS (F53B Major)	7.85	1.9	ng/L	8.98		87.5	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	8.22	1.9	ng/L	9.09		90.4	70-130			
Surrogate: 13C-PFHxA	37.6		ng/L	38.5		97.8	70-130			
Surrogate: M3HFPO-DA	38.3		ng/L	38.5		99.7	70-130			
Surrogate: 13C-PFDA	38.2		ng/L	38.5		99.2	70-130			
Surrogate: d5-NEtFOSAA	147		ng/L	154		95.7	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m ³	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 LR Lionel Rios
 JFC James F. Constantino
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BB2 Bethany M Bisnett

CONTINUING CALIBRATION CHECK

EPA 537.1

S064564-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	444	447	1.135859	1.166913		0.6	30
Perfluorohexanoic acid (PFHxA)	A	500	475	0.7557946	0.7473868		-4.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	430	0.9172992	0.87481		-5.9	30
Perfluoroheptanoic acid (PFHpA)	A	500	459	0.5186879	0.5126173		-8.2	30
Perfluorooctanoic acid (PFOA)	A	500	521	1.014466	1.054571		4.2	30
Perfluorooctanesulfonic acid (PFOS)	A	464	469	0.9546162	0.9821549		1.0	30
Perfluorononanoic acid (PFNA)	A	500	511	0.8583182	0.917936		2.2	30
Perfluorodecanoic acid (PFDA)	A	500	463	0.9883469	0.9436683		-7.3	30
N-EtFOSAA	A	500	474	0.8211978	0.8642344		-5.2	30
Perfluoroundecanoic acid (PFUnA)	A	500	526	1.00186	1.067819		5.3	30
N-MeFOSAA	A	500	477	0.9767918	1.018317		-4.6	30
Perfluorododecanoic acid (PFDoA)	A	500	431	1.175679	1.062875		-13.7	30
Perfluorotridecanoic acid (PFTrDA)	A	500	437	1.152766	1.075012		-12.7	30
Perfluorotetradecanoic acid (PFTA)	A	500	426	0.9718999	0.9007773		-14.8	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	602	1.628033E-02	2.022191E-02		20.5	30
11Cl-PF3OUdS (F53B Minor)	A	472	414	1.429084	1.383516		-12.3	30
9Cl-PF3ONS (F53B Major)	A	466	405	2.949299	2.850826		-13.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	431	1.373201	1.314253		-8.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064564-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2020	1.135859	1.057043		-8.9	30
Perfluorohexanoic acid (PFHxA)	A	2500	2290	0.7557946	0.7209404		-8.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2160	0.9172992	0.8818705		-5.2	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2210	0.5186879	0.4939743		-11.5	30
Perfluorooctanoic acid (PFOA)	A	2500	2540	1.014466	1.027227		1.5	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2270	0.9546162	0.9498457		-2.3	30
Perfluorononanoic acid (PFNA)	A	2500	2360	0.8583182	0.8460188		-5.8	30
Perfluorodecanoic acid (PFDA)	A	2500	2520	0.9883469	1.025504		0.7	30
N-EtFOSAA	A	2500	2370	0.8211978	0.8611559		-5.1	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2580	1.00186	1.049016		3.4	30
N-MeFOSAA	A	2500	2280	0.9767918	0.9710313		-8.8	30
Perfluorododecanoic acid (PFDoA)	A	2500	2440	1.175679	1.199709		-2.6	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2440	1.152766	1.199325		-2.6	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2390	0.9718999	1.010036		-4.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2210	1.628033E-02	0.0148711		-11.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2170	1.429084	1.449166		-8.0	30
9Cl-PF3ONS (F53B Major)	A	2330	2180	2.949299	3.056203		-6.5	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2240	1.373201	1.36719		-5.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2250	1.135859	1.175661		1.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2270	0.7557946	0.7128042		-9.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2210	0.9172992	0.9026665		-2.9	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2160	0.5186879	0.4819864		-13.7	30
Perfluorooctanoic acid (PFOA)	A	2500	2650	1.014466	1.07518		6.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2450	0.9546162	1.024945		5.4	30
Perfluorononanoic acid (PFNA)	A	2500	2550	0.8583182	0.9147195		1.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2710	0.9883469	1.105104		8.5	30
N-EtFOSAA	A	2500	2530	0.8211978	0.9177848		1.2	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2800	1.00186	1.134988		11.9	30
N-MeFOSAA	A	2500	2460	0.9767918	1.045588		-1.8	30
Perfluorododecanoic acid (PFDoA)	A	2500	2650	1.175679	1.305484		6.0	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2720	1.152766	1.336643		8.6	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2640	0.9718999	1.117673		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2420	1.628033E-02	1.622857E-02		-3.3	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2370	1.429084	1.580493		0.4	30
9Cl-PF3ONS (F53B Major)	A	2330	2380	2.949299	3.33391		2.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2240	1.373201	1.369497		-5.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	23000	1.135859	1.204066		3.8	30
Perfluorohexanoic acid (PFHxA)	A	25000	26700	0.7557946	0.8400239		6.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	24500	0.9172992	0.9985564		7.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	26100	0.5186879	0.5836485		4.5	30
Perfluorooctanoic acid (PFOA)	A	25000	26800	1.014466	1.086907		7.4	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	24700	0.9546162	1.034115		6.4	30
Perfluorononanoic acid (PFNA)	A	25000	26700	0.8583182	0.958436		6.8	30
Perfluorodecanoic acid (PFDA)	A	25000	28400	0.9883469	1.157711		13.7	30
N-EtFOSAA	A	25000	26200	0.8211978	0.8869809		4.8	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27700	1.00186	1.125429		10.9	30
N-MeFOSAA	A	25000	26500	0.9767918	1.0947		6.1	30
Perfluorododecanoic acid (PFDoA)	A	25000	27800	1.175679	1.371556		11.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	28400	1.152766	1.396505		13.5	30
Perfluorotetradecanoic acid (PFTA)	A	25000	28000	0.9718999	1.184497		12.0	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25700	1.628033E-02	1.727919E-02		2.9	30
11Cl-PF3OUdS (F53B Minor)	A	23600	27200	1.429084	1.756578		15.1	30
9Cl-PF3ONS (F53B Major)	A	23300	26100	2.949299	3.549062		12.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	25000	1.373201	1.528624		6.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2240	1.135859	1.169424		0.8	30
Perfluorohexanoic acid (PFHxA)	A	2500	2580	0.7557946	0.8109661		3.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2350	0.9172992	0.9588437		3.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2450	0.5186879	0.5468278		-2.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2630	1.014466	1.06544		5.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2370	0.9546162	0.992586		2.1	30
Perfluorononanoic acid (PFNA)	A	2500	2530	0.8583182	0.9099244		1.4	30
Perfluorodecanoic acid (PFDA)	A	2500	2820	0.9883469	1.147251		12.7	30
N-EtFOSAA	A	2500	2470	0.8211978	0.8944513		-1.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2840	1.00186	1.15277		13.6	30
N-MeFOSAA	A	2500	2430	0.9767918	1.036022		-2.7	30
Perfluorododecanoic acid (PFDoA)	A	2500	2670	1.175679	1.314604		6.7	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2720	1.152766	1.339952		8.9	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2720	0.9718999	1.152383		9.0	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2470	1.628033E-02	0.0166028		-1.1	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2400	1.429084	1.601682		1.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2340	2.949299	3.284328		0.5	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2450	1.373201	1.49829		4.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21600	1.135859	1.127881		-2.8	30
Perfluorohexanoic acid (PFHxA)	A	25000	26800	0.7557946	0.843118		7.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	24000	0.9172992	0.978684		5.2	30
Perfluoroheptanoic acid (PFHpA)	A	25000	26500	0.5186879	0.5925618		6.1	30
Perfluorooctanoic acid (PFOA)	A	25000	27000	1.014466	1.091847		7.8	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	24200	0.9546162	1.015027		4.4	30
Perfluorononanoic acid (PFNA)	A	25000	26900	0.8583182	0.9668927		7.7	30
Perfluorodecanoic acid (PFDA)	A	25000	28300	0.9883469	1.151287		13.1	30
N-EtFOSAA	A	25000	26300	0.8211978	0.8902964		5.2	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27800	1.00186	1.127115		11.1	30
N-MeFOSAA	A	25000	26300	0.9767918	1.083849		5.0	30
Perfluorododecanoic acid (PFDoA)	A	25000	27700	1.175679	1.364352		10.8	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	28200	1.152766	1.387405		12.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27700	0.9718999	1.172784		10.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25800	1.628033E-02	1.735632E-02		3.4	30
11Cl-PF3OUdS (F53B Minor)	A	23600	26000	1.429084	1.683193		10.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25500	2.949299	3.47103		9.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	25200	1.373201	1.537678		6.7	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

1800 Elm Street SE
 Minneapolis, MN 55414

CHAIN OF CUSTODY RECORD
 1800 Elm Street SE
 Minneapolis, MN 55414

Phone: 612-607-6400
 Fax: 612-607-6344

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
 Tighe & Bond

Address: 120 Front Street, Worcester, MA 01610

Phone: 508-754-2201
 Project Name: Princeton Private Well Sampling
 Project Location: Princeton, MA

Project Number: P-0534017
 Project Manager: Jeff Arps/Michael Scherer

Pace Analytical Quote Name/Number:
 Invoice Recipient: Tighe & Bond
 Sampled By: M Scherer

Client Sample ID / Description: 15 HUBBARDSTON INF

Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
1 15 HUBBARDSTON INF	10/19/21	1200	GRAB	DW	U	2				
2 15 HUBBARDSTON INF						2				
3 15 HUBBARDSTON EFF						2				

Retention by (signature): *[Signature]* Date/Time: 10/19/21 1500
 Received by (signature): *[Signature]* Date/Time: 10/19/21 1500
 Relinquished by (signature): *[Signature]* Date/Time: 10/19/21 1500
 Relinquished by (signature): *[Signature]* Date/Time: 10/19/21 1500

Client Comments: Please report the 14 compound list

Special Requirements: MA MCP Required MA State DW Required
 MCP Certifications Form Required RCP Certifications Form Required

Project Entity: Government Municipality City
 Federal 21 J Brownfield
 MWRA School MBTA
 WRTA Other

Other: SOXHLET NON SOXHLET
 Format: PDF EXCEL
 CLP Like Data Pkg Required:
 Email To: mjscherer@tighebond.com

1 Preservation Code: H = HCL, M = Methanol, N = Nitric Acid, S = Sulfuric Acid, B = Sodium Bisulfate, X = Sodium Hydroxide, T = Sodium Thiosulfate, O = Other (please define)

1 Matrix Codes: GW = Ground Water, WW = Waste Water, DW = Drinking Water, A = Air, S = Soil, SL = Sludge, SOL = Solid, O = Other (please define)

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T & B

Received By EL Date 10/19/11 Time 1550

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____

Was Custody Seal intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____

Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	6	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear
DI-		Other Glass		Other Plastic		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Unused Media

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear
DI-		Other Plastic		Other Glass		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Comments:

P-0534
November 24, 2021

Nabil Roufail
Manaro Realty Trust
7 Deer Run
Charlton, Massachusetts 01507

Re: **Public Water Supply Sampling
23 Hubbardston, Princeton**

Dear Mr. Roufail:

Enclosed is a copy of the laboratory analytical results for the water sample collected from the public water supply well located at 23 Hubbardston Road as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the well water sample on October 24, 2021, and Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts analyzed the sample for per- and polyfluoroalkyl substances (PFAS). Con Test is a Massachusetts certified environmental laboratory.

A copy of the lab report is attached to this letter. Analytical results have been compared to MassDEP's drinking water Maximum Contaminant Level (MCL) of 20 nanograms per liter (ng/L), or parts per trillion (ppt), for the sum of six regulated PFAS compounds (PFAS6).

Your laboratory results indicate that the total regulated PFAS concentration was reported at 10 ppt in the water sample collected on October 24, 2021, which is below the MassDEP MCL of 20 ppt. The Town will continue to provide bottled water for your building.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, with any questions.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
Paul Varney, Sr., Certified Water Operator, PO Box 339, Barre, MA 01005
MassDEP, Bureau of Waste Site Cleanup





Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

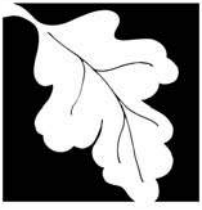
1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____
2. MCP phase of work during which the sampling will be/has been conducted:
- | | |
|--|---|
| Immediate Response Action | Phase III Feasibility Evaluation |
| Release Abatement Measure | Phase IV Remedy Implementation Plan |
| Utility-related Abatement Measure | Phase V/Remedy Operation Status |
| Phase I Initial Site Investigation | Post-Temporary Solution Operation, Maintenance and Monitoring |
| Phase II Comprehensive Site Assessment | Other _____ |
- (specify)
3. Description of property where sampling will be/has been conducted:
residential commercial industrial school/playground Other _____
(specify)
4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

-

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	23 Hubbardston Rd						
		UNKNOWN						
Well Depth (feet)								
Sampling Date		1/10/2020	1/27/2020	5/29/2020	10/2/2020	1/18/2021	4/22/2021	10/14/2021
<i>EPA 537.1 (ng/L)</i>								
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		4.9	5.0	4.1	2.6	3.9	4.7	5.5
Perfluorooctanesulfonic acid (PFOS)		4.1	3.7	3.3	2.3	2.7	3.2	4.5
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		9.0	8.7	7.4	4.9	6.6	7.9	10
Regulated Total	20	9.0	8.7	7.4	4.9	6.6	7.9	10

NOTES:
Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
ND = Not detected above the lab reporting limits shown in parentheses.
Bolded values exceed the proposed Method 1 Standard
MMCL is Massachusetts Maximum Contaminant Level

October 25, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

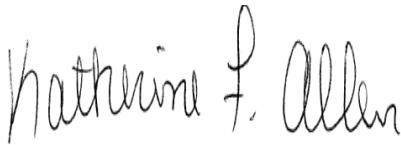
Project Location: 23 Hubbardston, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1132

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/25/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1132

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 23 Hubbardston, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
23 Hubbardston	21J1132-01	Drinking Water		EPA 537.1	
23 Hubbardston FB	21J1132-02	Drinking Water		EPA 537.1	
TB-10142021	21J1132-03	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative

Project Location: 23 Hubbardston, Princeton, MA

Sample Description:

Work Order: 21J1132

Date Received: 10/19/2021

Field Sample #: 23 Hubbardston

Sampled: 10/14/2021 12:00

Sample ID: 21J1132-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date	Date/Time	Analyst
		RL	MA ORSG					Prepared	Analyzed	
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:56	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:56	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:56	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:56	BLH
Perfluorooctanoic acid (PFOA)	5.5	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:56	BLH
Perfluorooctanesulfonic acid (PFOS)	4.5	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:56	BLH
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:56	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:56	BLH
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:56	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:56	BLH
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:56	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:56	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:56	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:56	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:56	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:56	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:56	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:56	BLH
Surrogates		% Recovery		Recovery Limits		Flag/Qual				
13C-PFHxA		82.8		70-130					10/21/21 20:56	
M3HFPO-DA		80.6		70-130					10/21/21 20:56	
13C-PFDA		93.2		70-130					10/21/21 20:56	
d5-NEtFOSAA		85.8		70-130					10/21/21 20:56	



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 23 Hubbardston, Princeton, MA

Sample Description:

Work Order: 21J1132

Date Received: 10/19/2021

Field Sample #: 23 Hubbardston FB

Sampled: 10/14/2021 12:00

Sample ID: 21J1132-02

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:04	BLH
Perfluorohexanoic acid (PFHxA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:04	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:04	BLH
Perfluoroheptanoic acid (PFHpA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:04	BLH
Perfluorooctanoic acid (PFOA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:04	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:04	BLH
Perfluorononanoic acid (PFNA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:04	BLH
Perfluorodecanoic acid (PFDA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:04	BLH
N-EtFOSAA	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:04	BLH
Perfluoroundecanoic acid (PFUnA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:04	BLH
N-MeFOSAA	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:04	BLH
Perfluorododecanoic acid (PFDoA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:04	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:04	BLH
Perfluorotetradecanoic acid (PFTA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:04	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:04	BLH
11Cl-PF3OUdS (F53B Minor)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:04	BLH
9Cl-PF3ONS (F53B Major)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:04	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:04	BLH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
13C-PFHxA	80.3	70-130	
M3HFPO-DA	78.0	70-130	
13C-PFDA	89.6	70-130	
d5-NEtFOSAA	83.4	70-130	

Project Location: 23 Hubbardston, Princeton, MA

Sample Description:

Work Order: 21J1132

Date Received: 10/19/2021

Field Sample #: TB-10142021

Sampled: 10/14/2021 00:00

Sample ID: 21J1132-03

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:11	BLH
Perfluorohexanoic acid (PFHxA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:11	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:11	BLH
Perfluoroheptanoic acid (PFHpA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:11	BLH
Perfluorooctanoic acid (PFOA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:11	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:11	BLH
Perfluorononanoic acid (PFNA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:11	BLH
Perfluorodecanoic acid (PFDA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:11	BLH
N-EtFOSAA	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:11	BLH
Perfluoroundecanoic acid (PFUnA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:11	BLH
N-MeFOSAA	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:11	BLH
Perfluorododecanoic acid (PFDoA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:11	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:11	BLH
Perfluorotetradecanoic acid (PFTA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:11	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:11	BLH
11Cl-PF3OUdS (F53B Minor)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:11	BLH
9Cl-PF3ONS (F53B Major)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:11	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:11	BLH
Surrogates		% Recovery		Recovery Limits		Flag/Qual				
13C-PFHxA		89.4		70-130					10/21/21 21:11	
M3HFPO-DA		89.7		70-130					10/21/21 21:11	
13C-PFDA		88.2		70-130					10/21/21 21:11	
d5-NEtFOSAA		83.5		70-130					10/21/21 21:11	

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1132-01 [23 Hubbardston]	B292840	260	1.00	10/20/21
21J1132-02 [23 Hubbardston FB]	B292840	255	1.00	10/20/21
21J1132-03 [TB-10142021]	B292840	254	1.00	10/20/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B292840 - EPA 537.1

Blank (B292840-BLK1)

Prepared: 10/20/21 Analyzed: 10/21/21

Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	36.4		ng/L	38.8		93.9	70-130			
Surrogate: M3HFPO-DA	37.1		ng/L	38.8		95.5	70-130			
Surrogate: 13C-PFDA	36.5		ng/L	38.8		94.0	70-130			
Surrogate: d5-NEtFOSAA	140		ng/L	155		90.1	70-130			

LCS (B292840-BS1)

Prepared: 10/20/21 Analyzed: 10/21/21

Perfluorobutanesulfonic acid (PFBS)	7.49	1.9	ng/L	8.53		87.7	70-130			
Perfluorohexanoic acid (PFHxA)	8.83	1.9	ng/L	9.62		91.8	70-130			
Perfluorohexanesulfonic acid (PFHxS)	8.40	1.9	ng/L	8.79		95.6	70-130			
Perfluoroheptanoic acid (PFHpA)	8.53	1.9	ng/L	9.62		88.7	70-130			
Perfluorooctanoic acid (PFOA)	8.74	1.9	ng/L	9.62		90.9	70-130			
Perfluorooctanesulfonic acid (PFOS)	8.36	1.9	ng/L	8.93		93.6	70-130			
Perfluorononanoic acid (PFNA)	8.50	1.9	ng/L	9.62		88.3	70-130			
Perfluorodecanoic acid (PFDA)	9.36	1.9	ng/L	9.62		97.3	70-130			
N-EtFOSAA	8.02	1.9	ng/L	9.62		83.4	70-130			
Perfluoroundecanoic acid (PFUnA)	9.18	1.9	ng/L	9.62		95.5	70-130			
N-MeFOSAA	7.98	1.9	ng/L	9.62		83.0	70-130			
Perfluorododecanoic acid (PFDoA)	8.78	1.9	ng/L	9.62		91.3	70-130			
Perfluorotridecanoic acid (PFTTrDA)	8.24	1.9	ng/L	9.62		85.6	70-130			
Perfluorotetradecanoic acid (PFTA)	7.81	1.9	ng/L	9.62		81.2	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	8.51	1.9	ng/L	9.62		88.5	70-130			
11Cl-PF3OUdS (F53B Minor)	7.76	1.9	ng/L	9.07		85.6	70-130			
9Cl-PF3ONS (F53B Major)	7.85	1.9	ng/L	8.98		87.5	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	8.22	1.9	ng/L	9.09		90.4	70-130			
Surrogate: 13C-PFHxA	37.6		ng/L	38.5		97.8	70-130			
Surrogate: M3HFPO-DA	38.3		ng/L	38.5		99.7	70-130			
Surrogate: 13C-PFDA	38.2		ng/L	38.5		99.2	70-130			
Surrogate: d5-NEtFOSAA	147		ng/L	154		95.7	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JFC James F. Constantino
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BB2 Bethany M Bisnett

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2250	1.135859	1.175661		1.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2270	0.7557946	0.7128042		-9.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2210	0.9172992	0.9026665		-2.9	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2160	0.5186879	0.4819864		-13.7	30
Perfluorooctanoic acid (PFOA)	A	2500	2650	1.014466	1.07518		6.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2450	0.9546162	1.024945		5.4	30
Perfluorononanoic acid (PFNA)	A	2500	2550	0.8583182	0.9147195		1.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2710	0.9883469	1.105104		8.5	30
N-EtFOSAA	A	2500	2530	0.8211978	0.9177848		1.2	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2800	1.00186	1.134988		11.9	30
N-MeFOSAA	A	2500	2460	0.9767918	1.045588		-1.8	30
Perfluorododecanoic acid (PFDoA)	A	2500	2650	1.175679	1.305484		6.0	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2720	1.152766	1.336643		8.6	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2640	0.9718999	1.117673		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2420	1.628033E-02	1.622857E-02		-3.3	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2370	1.429084	1.580493		0.4	30
9Cl-PF3ONS (F53B Major)	A	2330	2380	2.949299	3.33391		2.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2240	1.373201	1.369497		-5.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	23000	1.135859	1.204066		3.8	30
Perfluorohexanoic acid (PFHxA)	A	25000	26700	0.7557946	0.8400239		6.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	24500	0.9172992	0.9985564		7.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	26100	0.5186879	0.5836485		4.5	30
Perfluorooctanoic acid (PFOA)	A	25000	26800	1.014466	1.086907		7.4	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	24700	0.9546162	1.034115		6.4	30
Perfluorononanoic acid (PFNA)	A	25000	26700	0.8583182	0.958436		6.8	30
Perfluorodecanoic acid (PFDA)	A	25000	28400	0.9883469	1.157711		13.7	30
N-EtFOSAA	A	25000	26200	0.8211978	0.8869809		4.8	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27700	1.00186	1.125429		10.9	30
N-MeFOSAA	A	25000	26500	0.9767918	1.0947		6.1	30
Perfluorododecanoic acid (PFDoA)	A	25000	27800	1.175679	1.371556		11.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	28400	1.152766	1.396505		13.5	30
Perfluorotetradecanoic acid (PFTA)	A	25000	28000	0.9718999	1.184497		12.0	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25700	1.628033E-02	1.727919E-02		2.9	30
11Cl-PF3OUdS (F53B Minor)	A	23600	27200	1.429084	1.756578		15.1	30
9Cl-PF3ONS (F53B Major)	A	23300	26100	2.949299	3.549062		12.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	25000	1.373201	1.528624		6.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2240	1.135859	1.169424		0.8	30
Perfluorohexanoic acid (PFHxA)	A	2500	2580	0.7557946	0.8109661		3.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2350	0.9172992	0.9588437		3.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2450	0.5186879	0.5468278		-2.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2630	1.014466	1.06544		5.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2370	0.9546162	0.992586		2.1	30
Perfluorononanoic acid (PFNA)	A	2500	2530	0.8583182	0.9099244		1.4	30
Perfluorodecanoic acid (PFDA)	A	2500	2820	0.9883469	1.147251		12.7	30
N-EtFOSAA	A	2500	2470	0.8211978	0.8944513		-1.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2840	1.00186	1.15277		13.6	30
N-MeFOSAA	A	2500	2430	0.9767918	1.036022		-2.7	30
Perfluorododecanoic acid (PFDoA)	A	2500	2670	1.175679	1.314604		6.7	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2720	1.152766	1.339952		8.9	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2720	0.9718999	1.152383		9.0	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2470	1.628033E-02	0.0166028		-1.1	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2400	1.429084	1.601682		1.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2340	2.949299	3.284328		0.5	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2450	1.373201	1.49829		4.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21600	1.135859	1.127881		-2.8	30
Perfluorohexanoic acid (PFHxA)	A	25000	26800	0.7557946	0.843118		7.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	24000	0.9172992	0.978684		5.2	30
Perfluoroheptanoic acid (PFHpA)	A	25000	26500	0.5186879	0.5925618		6.1	30
Perfluorooctanoic acid (PFOA)	A	25000	27000	1.014466	1.091847		7.8	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	24200	0.9546162	1.015027		4.4	30
Perfluorononanoic acid (PFNA)	A	25000	26900	0.8583182	0.9668927		7.7	30
Perfluorodecanoic acid (PFDA)	A	25000	28300	0.9883469	1.151287		13.1	30
N-EtFOSAA	A	25000	26300	0.8211978	0.8902964		5.2	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27800	1.00186	1.127115		11.1	30
N-MeFOSAA	A	25000	26300	0.9767918	1.083849		5.0	30
Perfluorododecanoic acid (PFDoA)	A	25000	27700	1.175679	1.364352		10.8	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	28200	1.152766	1.387405		12.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27700	0.9718999	1.172784		10.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25800	1.628033E-02	1.735632E-02		3.4	30
11Cl-PF3OUdS (F53B Minor)	A	23600	26000	1.429084	1.683193		10.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25500	2.949299	3.47103		9.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	25200	1.373201	1.537678		6.7	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

1300 Elm Street SE
Minneapolis, MN 55414

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
Tighe & Bond
120 Front Street, Worcester, MA 01610
Phone: 508-754-2201
Project Name: Princeton Private Well Sampling
Project Location: Princeton, MA
Project Number: P-0534017
Project Manager: Jeff Arps/Michael Scherer
Pace Analytical Quote Name/Number:
Invoice Recipient:
Sampled By: Tighe & Bond
M Scherer

CHAIN OF CUSTODY RECORD

Requested Turnaround Time:
7-Day 10-Day
PFAS 10-Day (Std) Due Date:
Requested Analysis Method:
1-Day 3-Day
2-Day 4-Day
Field Filtered
Lab to Filter
Field Filtered
Lab to Filter
Format: PDF EXCEL
Other:
CLP Like Data Pkg Required:
Email To: mjscherer@tighebond.com
Fax To #:

ANALYSIS REQUESTED

Preservation Code	Matrix Code	Conc Code	Ending Date/Time	COMP/GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
			10/14/21	GRAB	DW	U			2		
			10/14/21			U			1		
									1		

1 Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

2 Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

*Pace Analytical is not responsible for missing samples from prepacked coolers

1 *Pace Analytical is not responsible for missing samples from prepacked coolers

2 Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

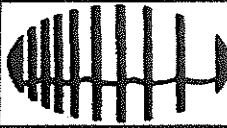
Client Comments: Please report the 14 compound list

Special Requirements:
MA MCP Required
MCP Certification Form Required
CT RCP Required
RCP Certification Form Required
MA State DW Required
PWSID #
Project Entity:
Government Municipality
Federal City
21 J Brownfield
Other Chromatogram
 WRTA AIHA-LAP, LLC

Relinquished by: (signature) [Signature] Date/Time: 10/14/21 1550
Received by: (signature) [Signature] Date/Time: 10/19/21 1015
Relinquished by: (signature) [Signature] Date/Time: 10/19/21 1550
Received by: (signature) [Signature] Date/Time: 10/19/21 1550
Relinquished by: (signature) [Signature] Date/Time: 10/19/21 1550
Received by: (signature) [Signature] Date/Time: 10/19/21 1550

Comments:
Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T E B

Received By EL Date 10/19/21 Time 1550

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp 2.0
By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client T Analysis T Sampler Name T
Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? _____

Are there Rushes? F Who was notified? _____

Are there Short Holds? F Who was notified? _____

Is there enough Volume? T

Is there Headspace where applicable? NA MS/MSD? F

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? FT On COC? FT

Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

P-0534
November 24, 2021

June Davenport
24 Boylston Ave
Princeton, Massachusetts 01541

Re: **Residential Well Sampling
24 Boylston Ave, Princeton**

Dear Ms. Davenport:

Enclosed is a copy of the laboratory analytical results for the water sample collected from the residential well located at 24 Boylston Ave as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the residential well water sample on October 18, 2021, and Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts analyzed the sample for per- and polyfluoroalkyl substances (PFAS). Con Test is a Massachusetts-certified environmental laboratory.

Your laboratory results indicate that PFAS was not reported above laboratory reporting limits in the water sample collected on October 18, 2021.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, with any questions.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____
2. MCP phase of work during which the sampling will be/has been conducted:
- | | |
|--|---|
| Immediate Response Action | Phase III Feasibility Evaluation |
| Release Abatement Measure | Phase IV Remedy Implementation Plan |
| Utility-related Abatement Measure | Phase V/Remedy Operation Status |
| Phase I Initial Site Investigation | Post-Temporary Solution Operation, Maintenance and Monitoring |
| Phase II Comprehensive Site Assessment | Other _____ |
- (specify)
3. Description of property where sampling will be/has been conducted:
- residential commercial industrial school/playground Other _____
- (specify)
4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

-

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	24 Boylston Ave					
		~200'					
		1/9/2020	5/29/2020	10/2/2020	1/19/2021	4/27/2021	10/18/2021
Well Depth (feet)							
Sampling Date							
EPA 537.1 (ng/L)							
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)

NOTES:
Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
ND = Not detected above the lab reporting limits shown in parentheses.
Bolded values exceed the proposed Method 1 Standard
MMCL is Massachusetts Maximum Contaminant Level

October 25, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

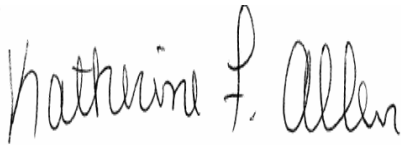
Project Location: 24 Boylston, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1139

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/25/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1139

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 24 Boylston, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
24 Boylston	21J1139-01	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 24 Boylston, Princeton, MA

Sample Description:

Work Order: 21J1139

Date Received: 10/19/2021

Field Sample #: 24 Boylston

Sampled: 10/18/2021 12:00

Sample ID: 21J1139-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:08	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:08	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:08	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:08	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:08	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:08	BLH
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:08	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:08	BLH
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:08	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:08	BLH
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:08	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:08	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:08	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:08	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:08	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:08	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:08	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 22:08	BLH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
13C-PFHxA	79.4	70-130	10/21/21 22:08
M3HFPO-DA	77.4	70-130	10/21/21 22:08
13C-PFDA	90.2	70-130	10/21/21 22:08
d5-NEtFOSAA	86.1	70-130	10/21/21 22:08

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1139-01 [24 Boylston]	B292840	270	1.00	10/20/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292840 - EPA 537.1										
Blank (B292840-BLK1)										
Prepared: 10/20/21 Analyzed: 10/21/21										
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	36.4		ng/L	38.8		93.9	70-130			
Surrogate: M3HFPO-DA	37.1		ng/L	38.8		95.5	70-130			
Surrogate: 13C-PFDA	36.5		ng/L	38.8		94.0	70-130			
Surrogate: d5-NEtFOSAA	140		ng/L	155		90.1	70-130			
LCS (B292840-BS1)										
Prepared: 10/20/21 Analyzed: 10/21/21										
Perfluorobutanesulfonic acid (PFBS)	7.49	1.9	ng/L	8.53		87.7	70-130			
Perfluorohexanoic acid (PFHxA)	8.83	1.9	ng/L	9.62		91.8	70-130			
Perfluorohexanesulfonic acid (PFHxS)	8.40	1.9	ng/L	8.79		95.6	70-130			
Perfluoroheptanoic acid (PFHpA)	8.53	1.9	ng/L	9.62		88.7	70-130			
Perfluorooctanoic acid (PFOA)	8.74	1.9	ng/L	9.62		90.9	70-130			
Perfluorooctanesulfonic acid (PFOS)	8.36	1.9	ng/L	8.93		93.6	70-130			
Perfluorononanoic acid (PFNA)	8.50	1.9	ng/L	9.62		88.3	70-130			
Perfluorodecanoic acid (PFDA)	9.36	1.9	ng/L	9.62		97.3	70-130			
N-EtFOSAA	8.02	1.9	ng/L	9.62		83.4	70-130			
Perfluoroundecanoic acid (PFUnA)	9.18	1.9	ng/L	9.62		95.5	70-130			
N-MeFOSAA	7.98	1.9	ng/L	9.62		83.0	70-130			
Perfluorododecanoic acid (PFDoA)	8.78	1.9	ng/L	9.62		91.3	70-130			
Perfluorotridecanoic acid (PFTTrDA)	8.24	1.9	ng/L	9.62		85.6	70-130			
Perfluorotetradecanoic acid (PFTA)	7.81	1.9	ng/L	9.62		81.2	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	8.51	1.9	ng/L	9.62		88.5	70-130			
11Cl-PF3OUdS (F53B Minor)	7.76	1.9	ng/L	9.07		85.6	70-130			
9Cl-PF3ONS (F53B Major)	7.85	1.9	ng/L	8.98		87.5	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	8.22	1.9	ng/L	9.09		90.4	70-130			
Surrogate: 13C-PFHxA	37.6		ng/L	38.5		97.8	70-130			
Surrogate: M3HFPO-DA	38.3		ng/L	38.5		99.7	70-130			
Surrogate: 13C-PFDA	38.2		ng/L	38.5		99.2	70-130			
Surrogate: d5-NEtFOSAA	147		ng/L	154		95.7	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JFC James F. Constantino
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BB2 Bethany M Bisnett

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2250	1.135859	1.175661		1.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2270	0.7557946	0.7128042		-9.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2210	0.9172992	0.9026665		-2.9	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2160	0.5186879	0.4819864		-13.7	30
Perfluorooctanoic acid (PFOA)	A	2500	2650	1.014466	1.07518		6.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2450	0.9546162	1.024945		5.4	30
Perfluorononanoic acid (PFNA)	A	2500	2550	0.8583182	0.9147195		1.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2710	0.9883469	1.105104		8.5	30
N-EtFOSAA	A	2500	2530	0.8211978	0.9177848		1.2	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2800	1.00186	1.134988		11.9	30
N-MeFOSAA	A	2500	2460	0.9767918	1.045588		-1.8	30
Perfluorododecanoic acid (PFDoA)	A	2500	2650	1.175679	1.305484		6.0	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2720	1.152766	1.336643		8.6	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2640	0.9718999	1.117673		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2420	1.628033E-02	1.622857E-02		-3.3	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2370	1.429084	1.580493		0.4	30
9Cl-PF3ONS (F53B Major)	A	2330	2380	2.949299	3.33391		2.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2240	1.373201	1.369497		-5.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	23000	1.135859	1.204066		3.8	30
Perfluorohexanoic acid (PFHxA)	A	25000	26700	0.7557946	0.8400239		6.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	24500	0.9172992	0.9985564		7.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	26100	0.5186879	0.5836485		4.5	30
Perfluorooctanoic acid (PFOA)	A	25000	26800	1.014466	1.086907		7.4	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	24700	0.9546162	1.034115		6.4	30
Perfluorononanoic acid (PFNA)	A	25000	26700	0.8583182	0.958436		6.8	30
Perfluorodecanoic acid (PFDA)	A	25000	28400	0.9883469	1.157711		13.7	30
N-EtFOSAA	A	25000	26200	0.8211978	0.8869809		4.8	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27700	1.00186	1.125429		10.9	30
N-MeFOSAA	A	25000	26500	0.9767918	1.0947		6.1	30
Perfluorododecanoic acid (PFDoA)	A	25000	27800	1.175679	1.371556		11.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	28400	1.152766	1.396505		13.5	30
Perfluorotetradecanoic acid (PFTA)	A	25000	28000	0.9718999	1.184497		12.0	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25700	1.628033E-02	1.727919E-02		2.9	30
11Cl-PF3OUdS (F53B Minor)	A	23600	27200	1.429084	1.756578		15.1	30
9Cl-PF3ONS (F53B Major)	A	23300	26100	2.949299	3.549062		12.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	25000	1.373201	1.528624		6.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2240	1.135859	1.169424		0.8	30
Perfluorohexanoic acid (PFHxA)	A	2500	2580	0.7557946	0.8109661		3.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2350	0.9172992	0.9588437		3.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2450	0.5186879	0.5468278		-2.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2630	1.014466	1.06544		5.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2370	0.9546162	0.992586		2.1	30
Perfluorononanoic acid (PFNA)	A	2500	2530	0.8583182	0.9099244		1.4	30
Perfluorodecanoic acid (PFDA)	A	2500	2820	0.9883469	1.147251		12.7	30
N-EtFOSAA	A	2500	2470	0.8211978	0.8944513		-1.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2840	1.00186	1.15277		13.6	30
N-MeFOSAA	A	2500	2430	0.9767918	1.036022		-2.7	30
Perfluorododecanoic acid (PFDoA)	A	2500	2670	1.175679	1.314604		6.7	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2720	1.152766	1.339952		8.9	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2720	0.9718999	1.152383		9.0	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2470	1.628033E-02	0.0166028		-1.1	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2400	1.429084	1.601682		1.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2340	2.949299	3.284328		0.5	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2450	1.373201	1.49829		4.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21600	1.135859	1.127881		-2.8	30
Perfluorohexanoic acid (PFHxA)	A	25000	26800	0.7557946	0.843118		7.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	24000	0.9172992	0.978684		5.2	30
Perfluoroheptanoic acid (PFHpA)	A	25000	26500	0.5186879	0.5925618		6.1	30
Perfluorooctanoic acid (PFOA)	A	25000	27000	1.014466	1.091847		7.8	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	24200	0.9546162	1.015027		4.4	30
Perfluorononanoic acid (PFNA)	A	25000	26900	0.8583182	0.9668927		7.7	30
Perfluorodecanoic acid (PFDA)	A	25000	28300	0.9883469	1.151287		13.1	30
N-EtFOSAA	A	25000	26300	0.8211978	0.8902964		5.2	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27800	1.00186	1.127115		11.1	30
N-MeFOSAA	A	25000	26300	0.9767918	1.083849		5.0	30
Perfluorododecanoic acid (PFDoA)	A	25000	27700	1.175679	1.364352		10.8	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	28200	1.152766	1.387405		12.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27700	0.9718999	1.172784		10.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25800	1.628033E-02	1.735632E-02		3.4	30
11Cl-PF3OUdS (F53B Minor)	A	23600	26000	1.429084	1.683193		10.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25500	2.949299	3.47103		9.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	25200	1.373201	1.537678		6.7	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

2151139

CHAIN OF CUSTODY RECORD
1800 Elm Street SE
Minneapolis, MN 55414

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
Tighe & Bond
120 Front Street, Worcester, MA 01610
Phone: 508-754-2201
Princeton Private Well Sampling
Princeton, MA
Project Number: P-0534017
Project Manager: Jeff Arps/Michael Scherer
Pace Analytical Quote Name/Number
Invoice Recipient:
Sampled By: M Scherer

7-Day 10-Day Field Filtered
PFAS 10-Day (std) Due Date: Lab to Filter
1-Day 3-Day Field Filtered
2-Day 4-Day Lab to Filter
Format: PDF EXCEL
Other:
CLP Like Data Pkg Required:
Email To: mjscherer@tighebond.com
Fax To #:

Pace Analytical Work Order#	Client Sample ID / Description	Region/Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Com-Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
	24 Bay Stew	10/18/21	1200	GRAB	DW	U	2				

Client Comments: Please report the 14 compound list

Relinquished by: (signature) *Michael Scherer* Date/Time: 10/18/21 1500
Received by: (signature) *Jeff Arps* Date/Time: 10/19/21 1015
Relinquished by: (signature) *Jeff Arps* Date/Time: 10/19/21 1550
Received by: (signature) *Jeff Arps* Date/Time: 10/19/21 1550
Relinquished by: (signature) *Jeff Arps* Date/Time: 10/19/21 1550

Received by: (signature) _____ Date/Time: _____
Relinquished by: (signature) _____ Date/Time: _____
Received by: (signature) _____ Date/Time: _____

ANALYSIS REQUESTED

Preservation Code	Counter Use Only	Total Number Of:
VIALS		
GLASS		
PLASTIC		
BACTERIA		
ENCORE		

Glassware in the fridge? Y / N
Glassware in freezer? Y / N
Prepackaged Cooler? Y / N
*Pace Analytical is not responsible for missing samples from prepacked coolers

1 Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

2 Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

Special Requirements: MA MCP Required MA State DW Required
MCP Certification Form Required
CT RCP Required
RCP Certification Form Required

Project Entity: Government Federal City
Municipality: 21 J
City: Brownfield

Other: Chromatogram
 MWRA School
 WRTA MBTA AIMA-LAP, LLC

RELAC and AIMA-LAP, LLC Accredited

Comments: _____

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client TEB
 Received By GA Date 10/19/21 Time 1550
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

P-0534
November 29, 2021

Robert Hersh
Andrea Caspari
33 Hubbardston Road
Princeton, Massachusetts 01541

Re: **Residential Well Sampling**
33 Hubbardston Road, Princeton

Dear Mr. Hersh and Ms. Caspari:

Enclosed is a copy of the laboratory analytical results for the groundwater sample collected from the residential well located at 33 Hubbardston Road as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the residential well water sample on October 18, 2021 and Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts analyzed the sample for per- and polyfluoroalkyl substances (PFAS). Con Test is a Massachusetts certified environmental laboratory.

A copy of the lab report is attached to this letter. Analytical results have been compared to MassDEP's drinking water Maximum Contaminant Level (MCL) of 20 nanograms per liter (ng/L), or parts per trillion (ppt), for the sum of six specific PFAS compounds (PFAS6).

Your laboratory results indicate that the PFAS6 concentration was reported at 2.8 ppt in the water sample collected on October 18, 2021, which is below the MassDEP MCL of 20 ppt. Because of this detection, you are being provided with bottled water by the Town.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, with any questions.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

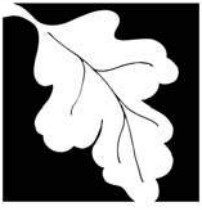
1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____
2. MCP phase of work during which the sampling will be/has been conducted:
- | | |
|--|---|
| Immediate Response Action | Phase III Feasibility Evaluation |
| Release Abatement Measure | Phase IV Remedy Implementation Plan |
| Utility-related Abatement Measure | Phase V/Remedy Operation Status |
| Phase I Initial Site Investigation | Post-Temporary Solution Operation, Maintenance and Monitoring |
| Phase II Comprehensive Site Assessment | Other _____ |
- (specify)
3. Description of property where sampling will be/has been conducted:
residential commercial industrial school/playground Other _____
(specify)
4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

 -

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	33 Hubbardston Rd				
		UNKNOWN				
Well Depth (feet)						
Sampling Date		2/5/2020	7/23/2020	1/21/2021	4/26/2021	10/18/2021
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	2.1	ND (2.0)	2.1	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		2.5	2.1	ND (2.0)	2.4	2.8
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		2.5	4.2	ND (2.0)	4.5	2.8
Regulated Total	20	2.5	4.2	ND (2.0)	4.5	2.8

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

October 27, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

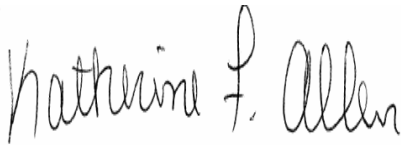
Project Location: 33 Hubbardston, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1146

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/27/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1146

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 33 Hubbardston, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
33 Hubbardston	21J1146-01	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 33 Hubbardston, Princeton, MA

Sample Description:

Work Order: 21J1146

Date Received: 10/19/2021

Field Sample #: 33 Hubbardston

Sampled: 10/18/2021 12:00

Sample ID: 21J1146-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:50	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:50	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:50	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:50	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:50	BLH
Perfluorooctanesulfonic acid (PFOS)	2.8	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:50	BLH
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:50	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:50	BLH
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:50	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:50	BLH
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:50	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:50	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:50	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:50	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:50	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:50	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:50	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 11:50	BLH
Surrogates		% Recovery		Recovery Limits		Flag/Qual				
13C-PFHxA		121		70-130					10/26/21 11:50	
M3HFPO-DA		118		70-130					10/26/21 11:50	
13C-PFDA		120		70-130					10/26/21 11:50	
d5-NEtFOSAA		128		70-130					10/26/21 11:50	

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1146-01 [33 Hubbardston]	B292862	269	1.00	10/22/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B292862 - EPA 537.1

Blank (B292862-BLK1)

Prepared: 10/22/21 Analyzed: 10/26/21

Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	43.8		ng/L	37.3		117	70-130			
Surrogate: M3HFPO-DA	43.4		ng/L	37.3		116	70-130			
Surrogate: 13C-PFDA	37.9		ng/L	37.3		102	70-130			
Surrogate: d5-NEtFOSAA	170		ng/L	149		114	70-130			

LCS (B292862-BS1)

Prepared: 10/22/21 Analyzed: 10/26/21

Perfluorobutanesulfonic acid (PFBS)	15.8	1.9	ng/L	16.5		95.7	70-130			
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.6	70-130			
Perfluorohexanesulfonic acid (PFHxS)	17.0	1.9	ng/L	17.0		99.8	70-130			
Perfluoroheptanoic acid (PFHpA)	16.3	1.9	ng/L	18.6		87.6	70-130			
Perfluorooctanoic acid (PFOA)	17.6	1.9	ng/L	18.6		94.7	70-130			
Perfluorooctanesulfonic acid (PFOS)	15.8	1.9	ng/L	17.2		91.4	70-130			
Perfluorononanoic acid (PFNA)	15.4	1.9	ng/L	18.6		83.1	70-130			
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130			
N-EtFOSAA	17.4	1.9	ng/L	18.6		93.6	70-130			
Perfluoroundecanoic acid (PFUnA)	17.8	1.9	ng/L	18.6		95.7	70-130			
N-MeFOSAA	17.3	1.9	ng/L	18.6		93.2	70-130			
Perfluorododecanoic acid (PFDoA)	17.7	1.9	ng/L	18.6		95.2	70-130			
Perfluorotridecanoic acid (PFTTrDA)	17.2	1.9	ng/L	18.6		92.4	70-130			
Perfluorotetradecanoic acid (PFTA)	17.4	1.9	ng/L	18.6		93.8	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.3	1.9	ng/L	18.6		93.1	70-130			
11Cl-PF3OUdS (F53B Minor)	18.0	1.9	ng/L	17.5		103	70-130			
9Cl-PF3ONS (F53B Major)	17.9	1.9	ng/L	17.3		103	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.8	1.9	ng/L	17.6		95.4	70-130			
Surrogate: 13C-PFHxA	41.0		ng/L	37.2		110	70-130			
Surrogate: M3HFPO-DA	40.4		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.9		ng/L	37.2		99.2	70-130			
Surrogate: d5-NEtFOSAA	163		ng/L	149		109	70-130			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292862 - EPA 537.1										
LCS Dup (B292862-BSD1)										
					Prepared: 10/22/21 Analyzed: 10/26/21					
Perfluorobutanesulfonic acid (PFBS)	15.5	1.9	ng/L	16.5		93.8	70-130	1.88	30	
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.7	70-130	0.343	30	
Perfluorohexanesulfonic acid (PFHxS)	17.1	1.9	ng/L	17.0		101	70-130	1.06	30	
Perfluoroheptanoic acid (PFHpA)	16.1	1.9	ng/L	18.6		86.3	70-130	1.32	30	
Perfluorooctanoic acid (PFOA)	17.1	1.9	ng/L	18.6		91.9	70-130	2.72	30	
Perfluorooctanesulfonic acid (PFOS)	15.4	1.9	ng/L	17.3		89.0	70-130	2.44	30	
Perfluorononanoic acid (PFNA)	15.3	1.9	ng/L	18.6		82.0	70-130	1.12	30	
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130	0.149	30	
N-EtFOSAA	17.1	1.9	ng/L	18.6		91.7	70-130	1.81	30	
Perfluoroundecanoic acid (PFUnA)	18.0	1.9	ng/L	18.6		96.5	70-130	1.08	30	
N-MeFOSAA	17.8	1.9	ng/L	18.6		95.6	70-130	2.69	30	
Perfluorododecanoic acid (PFDoA)	17.3	1.9	ng/L	18.6		92.9	70-130	2.31	30	
Perfluorotridecanoic acid (PFTrDA)	17.3	1.9	ng/L	18.6		92.9	70-130	0.701	30	
Perfluorotetradecanoic acid (PFTA)	17.1	1.9	ng/L	18.6		92.0	70-130	1.83	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.1	1.9	ng/L	18.6		91.9	70-130	1.05	30	
11Cl-PF3OUdS (F53B Minor)	17.8	1.9	ng/L	17.6		101	70-130	1.35	30	
9Cl-PF3ONS (F53B Major)	17.6	1.9	ng/L	17.4		101	70-130	2.07	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.7	1.9	ng/L	17.6		95.1	70-130	0.145	30	
Surrogate: 13C-PFHxA	40.7		ng/L	37.2		109	70-130			
Surrogate: M3HFPO-DA	40.5		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.7		ng/L	37.2		98.5	70-130			
Surrogate: d5-NEtFOSAA	166		ng/L	149		111	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BAA Bonita A. Abanulo

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	444	442	1.205187	1.224447		-0.5	30
Perfluorohexanoic acid (PFHxA)	A	500	493	0.7174549	0.7339039		-1.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	467	0.9422487	0.9997435		2.2	30
Perfluoroheptanoic acid (PFHpA)	A	500	429	0.5131844	0.4640475		-14.1	30
Perfluorooctanoic acid (PFOA)	A	500	551	1.018894	1.158365		10.3	30
Perfluorooctanesulfonic acid (PFOS)	A	464	478	0.9862048	1.021105		2.9	30
Perfluorononanoic acid (PFNA)	A	500	412	0.9556153	0.8088272		-17.6	30
Perfluorodecanoic acid (PFDA)	A	500	480	1.019289	1.029208		-4.1	30
N-EtFOSAA	A	500	483	0.7469728	0.748993		-3.4	30
Perfluoroundecanoic acid (PFUnA)	A	500	522	0.9840387	1.060965		4.3	30
N-MeFOSAA	A	500	507	0.9030075	0.9168343		1.3	30
Perfluorododecanoic acid (PFDoA)	A	500	500	1.153654	1.231809		0.07	30
Perfluorotridecanoic acid (PFTrDA)	A	500	453	1.231259	1.166599		-9.4	30
Perfluorotetradecanoic acid (PFTA)	A	500	467	1.033649	1.001868		-6.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	549	1.481833E-02	1.651154E-02		9.8	30
11Cl-PF3OUdS (F53B Minor)	A	472	474	1.641038	1.639428		0.3	30
9Cl-PF3ONS (F53B Major)	A	466	466	3.518141	3.5012		0.09	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	446	1.350704	1.324111		-5.5	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2080	1.205187	1.151823		-6.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2450	0.7174549	0.7276259		-2.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2280	0.9422487	0.9796582		0.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2190	0.5131844	0.4730903		-12.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2540	1.018894	1.065353		1.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2240	0.9862048	0.956855		-3.5	30
Perfluorononanoic acid (PFNA)	A	2500	2280	0.9556153	0.8939886		-8.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2470	1.019289	1.059261		-1.3	30
N-EtFOSAA	A	2500	2540	0.7469728	0.78652		1.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2690	0.9840387	1.094937		7.7	30
N-MeFOSAA	A	2500	2470	0.9030075	0.8958022		-1.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2600	1.153654	1.279111		3.9	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2620	1.231259	1.3494		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2650	1.033649	1.137421		5.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2380	1.481833E-02	1.432532E-02		-4.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.710564		4.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2460	3.518141	3.704886		5.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2350	1.350704	1.396409		-0.4	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21900	1.205187	1.212846		-1.4	30
Perfluorohexanoic acid (PFHxA)	A	25000	25800	0.7174549	0.766353		3.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	0.9992528		2.1	30
Perfluoroheptanoic acid (PFHpA)	A	25000	24100	0.5131844	0.520733		-3.6	30
Perfluorooctanoic acid (PFOA)	A	25000	25600	1.018894	1.07771		2.6	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23500	0.9862048	1.003068		1.1	30
Perfluorononanoic acid (PFNA)	A	25000	23800	0.9556153	0.9362592		-4.6	30
Perfluorodecanoic acid (PFDA)	A	25000	25900	1.019289	1.111468		3.6	30
N-EtFOSAA	A	25000	25700	0.7469728	0.768614		3.0	30
Perfluoroundecanoic acid (PFUnA)	A	25000	26700	0.9840387	1.085744		6.7	30
N-MeFOSAA	A	25000	25400	0.9030075	0.9491052		1.7	30
Perfluorododecanoic acid (PFDoA)	A	25000	26600	1.153654	1.308219		6.3	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26200	1.231259	1.349207		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	26400	1.033649	1.134729		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25400	1.481833E-02	1.529015E-02		1.7	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25100	1.641038	1.825779		6.4	30
9Cl-PF3ONS (F53B Major)	A	23300	25000	3.518141	3.980416		7.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24300	1.350704	1.445925		3.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2090	1.205187	1.159763		-5.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2400	0.7174549	0.7136453		-4.1	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2220	0.9422487	0.9521833		-2.7	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2200	0.5131844	0.4751433		-12.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2490	1.018894	1.046674		-0.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	0.9862048	0.9647938		-2.7	30
Perfluorononanoic acid (PFNA)	A	2500	2290	0.9556153	0.897298		-8.6	30
Perfluorodecanoic acid (PFDA)	A	2500	2500	1.019289	1.072089		-0.1	30
N-EtFOSAA	A	2500	2490	0.7469728	0.7685828		-0.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2700	0.9840387	1.099698		8.1	30
N-MeFOSAA	A	2500	2480	0.9030075	0.8993446		-0.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2610	1.153654	1.285782		4.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2540	1.231259	1.306517		1.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2560	1.033649	1.098145		2.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2340	1.481833E-02	1.407048E-02		-6.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.708613		4.2	30
9Cl-PF3ONS (F53B Major)	A	2330	2520	3.518141	3.798072		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2340	1.350704	1.388313		-1.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV5

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	22000	1.205187	1.219675		-0.9	30
Perfluorohexanoic acid (PFHxA)	A	25000	25700	0.7174549	0.7639828		2.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	1.001704		2.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	23800	0.5131844	0.5144887		-4.8	30
Perfluorooctanoic acid (PFOA)	A	25000	25400	1.018894	1.068279		1.7	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23600	0.9862048	1.009655		1.8	30
Perfluorononanoic acid (PFNA)	A	25000	23700	0.9556153	0.9312701		-5.1	30
Perfluorodecanoic acid (PFDA)	A	25000	26200	1.019289	1.125386		4.9	30
N-EtFOSAA	A	25000	26000	0.7469728	0.7756554		3.9	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27400	0.9840387	1.11475		9.6	30
N-MeFOSAA	A	25000	25900	0.9030075	0.9658908		3.4	30
Perfluorododecanoic acid (PFDoA)	A	25000	27400	1.153654	1.347163		9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26900	1.231259	1.383697		7.4	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27100	1.033649	1.164994		8.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	23700	1.481833E-02	1.427195E-02		-5.1	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25800	1.641038	1.874904		9.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25200	3.518141	4.012609		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24000	1.350704	1.426229		1.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

2151146

1800 Elm Street SE
Minneapolis, MN 55414

CHAIN OF CUSTODY RECORD

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
Tighe & Bond
120 Front Street, Worcester, MA 01610
Phone: 508-754-2201
Project Location: Princeton Private Well Sampling
Princeton, MA
Project Number: P-0534017
Project Manager: Jeff Arps/Michael Scherer
Pace Analytical Quote Name/Number:
Invoice Recipient: Tighe & Bond
Sampled By: M Scherer

7-Day 10-Day Field Filtered
PFAS 10-Day (std) Due Date:
1-Day 3-Day Field Filtered
2-Day 4-Day Lab to Filter
Format: PDF EXCEL
Other: **PCB ONLY**
CLP Like Data Pkg Required: SOXHLET
Email To: mjscherer@tighebond.com NON SOXHLET
Fax To #:

Pace Analytical Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc. Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
	33 Mapp Assesment	10/18/21	1200	GRAB	DW	U	2				

Client Comments: Please report the 14 compound list

Relinquished by: (signature) *[Signature]* Date/Time: 10/15/21 1530
 Received by: (signature) *[Signature]* Date/Time: 10/19/21 1015
 Relinquished by: (signature) *[Signature]* Date/Time: 10/19/21 1550
 Received by: (signature) *[Signature]* Date/Time: 10/19/21 1550
 Relinquished by: (signature) *[Signature]* Date/Time: 10/19/21 1550

Special Requirements: MA MCP Required MA MCP Certification Form Required
 GW-1 CT RCP Required
 RCP Certification Forms Required
 MA State DW Required
 PWSID #

Project Entity: Government Municipality MWRA WRTA Other
 Federal 21 J School MBTA
 City Brownfield

Comments: **RELAC and AIHA-LAP, LLC Accredited**

1 Preservation Code
Counter Use Only
Total Number Of:
VIALS
GLASS
PLASTIC
BACTERIA
ENCORE
Glassware in the fridge?
Y / N
Glassware in freezer? Y / N
Prepackaged Cooler? Y / N
*Pace Analytical is not responsible for missing samples from prepacked coolers
1 Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)
2 Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

ANALYSIS REQUESTED

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

MA MCP Required
 MA MCP Certification Form Required
 GW-1
 CT RCP Required
 RCP Certification Forms Required
 MA State DW Required
 PWSID #

Project Entity: Government Municipality MWRA WRTA Other
 Federal 21 J School MBTA
 City Brownfield

Comments: **RELAC and AIHA-LAP, LLC Accredited**

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T&B
 Received By ML Date 10/19/21 Time 1550
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

P-0534
November 30, 2021

O'Neill Mazyk
33 Mountain Road
Princeton, Massachusetts 01541

Re: **Residential Well Sampling
33 Mountain Road, Princeton**

Dear Mr. Mazyk:

Enclosed is a copy of the laboratory analytical results for the water sample collected from the residential well located at 33 Mountain Road as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the residential well water sample on October 18, 2021, and Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts analyzed the sample for per- and polyfluoroalkyl substances (PFAS). Con Test is a Massachusetts-certified environmental laboratory.

A copy of the lab report is attached to this letter. Analytical results have been compared to MassDEP's drinking water Maximum Contaminant Level (MCL) of 20 nanograms per liter (ng/L), or parts per trillion (ppt), for the sum of six specific PFAS compounds (PFAS6).

Your laboratory results indicate that PFAS was not detected above laboratory reporting limits in the water sample collected on October 18, 2021. A copy of the lab report is attached to this letter. Because PFAS was previously detected in your well water you will continue to receive bottled water from the Town.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, with any questions.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup





Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

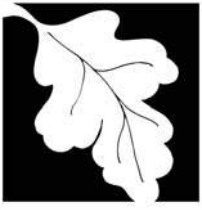
1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____
2. MCP phase of work during which the sampling will be/has been conducted:
- | | |
|--|---|
| Immediate Response Action | Phase III Feasibility Evaluation |
| Release Abatement Measure | Phase IV Remedy Implementation Plan |
| Utility-related Abatement Measure | Phase V/Remedy Operation Status |
| Phase I Initial Site Investigation | Post-Temporary Solution Operation, Maintenance and Monitoring |
| Phase II Comprehensive Site Assessment | Other _____ |
- (specify)
3. Description of property where sampling will be/has been conducted:
residential commercial industrial school/playground Other _____
(specify)
4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

	-	
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NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	33 Mountain Rd				
		2/7/2020	7/22/2020	1/21/2021	4/16/2021	10/18/2021
Well Depth (feet)		UNKNOWN				
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	2.5	2.2	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	2.5	2.2	ND (2.0)
Regulated Total	20	ND (2.0)	ND (2.0)	2.5	2.2	ND (2.0)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

October 27, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

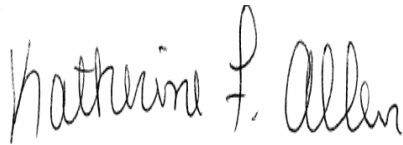
Project Location: 33 Mountain, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1136

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/27/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1136

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 33 Mountain, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
33 Mountain	21J1136-01	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

EPA 537.1

Qualifications:

Surrogate recovery is outside of control limits. Re-extraction yielded similar surrogate non-conformance. Both results reported.

Analyte & Samples(s) Qualified:

M3HFPO-DA

21J1136-01[33 Mountain], 21J1136-01RE1[33 Mountain]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Technical Representative

Project Location: 33 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1136

Date Received: 10/19/2021

Field Sample #: 33 Mountain

Sampled: 10/18/2021 12:00

Sample ID: 21J1136-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date	Date/Time	Analyst
			MA	ORSG					Prepared	Analyzed	
Perfluorobutanesulfonic acid (PFBS)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:44	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	1.9			ng/L	1		EPA 537.1	10/25/21	10/26/21 17:32	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:44	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9			ng/L	1		EPA 537.1	10/25/21	10/26/21 17:32	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:44	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9			ng/L	1		EPA 537.1	10/25/21	10/26/21 17:32	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:44	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9			ng/L	1		EPA 537.1	10/25/21	10/26/21 17:32	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:44	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9			ng/L	1		EPA 537.1	10/25/21	10/26/21 17:32	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:44	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9			ng/L	1		EPA 537.1	10/25/21	10/26/21 17:32	BLH
Perfluorononanoic acid (PFNA)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:44	BLH
Perfluorononanoic acid (PFNA)	ND	1.9			ng/L	1		EPA 537.1	10/25/21	10/26/21 17:32	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:44	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9			ng/L	1		EPA 537.1	10/25/21	10/26/21 17:32	BLH
N-EtFOSAA	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:44	BLH
N-EtFOSAA	ND	1.9			ng/L	1		EPA 537.1	10/25/21	10/26/21 17:32	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:44	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9			ng/L	1		EPA 537.1	10/25/21	10/26/21 17:32	BLH
N-MeFOSAA	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:44	BLH
N-MeFOSAA	ND	1.9			ng/L	1		EPA 537.1	10/25/21	10/26/21 17:32	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:44	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9			ng/L	1		EPA 537.1	10/25/21	10/26/21 17:32	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9			ng/L	1		EPA 537.1	10/25/21	10/26/21 17:32	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:44	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:44	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9			ng/L	1		EPA 537.1	10/25/21	10/26/21 17:32	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:44	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9			ng/L	1		EPA 537.1	10/25/21	10/26/21 17:32	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:44	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9			ng/L	1		EPA 537.1	10/25/21	10/26/21 17:32	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:44	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9			ng/L	1		EPA 537.1	10/25/21	10/26/21 17:32	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9			ng/L	1		EPA 537.1	10/20/21	10/22/21 12:44	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9			ng/L	1		EPA 537.1	10/25/21	10/26/21 17:32	BLH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
13C-PFHxA	75.1	70-130	
13C-PFHxA	76.4	70-130	
M3HFPO-DA	66.2	* 70-130	PF-02
M3HFPO-DA	64.1	* 70-130	PF-02
13C-PFDA	86.6	70-130	
13C-PFDA	79.0	70-130	

Project Location: 33 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1136

Date Received: 10/19/2021

Field Sample #: 33 Mountain

Sampled: 10/18/2021 12:00

Sample ID: 21J1136-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date	Date/Time	Analyst
		RL	MA ORSG					Prepared	Analyzed	
Surrogates		% Recovery	Recovery Limits			Flag/Qual				
d5-NEtFOSAA		82.8		70-130				10/22/21	12:44	
d5-NEtFOSAA		81.4		70-130				10/26/21	17:32	

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1136-01 [33 Mountain]	B292840	270	1.00	10/20/21

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1136-01RE1 [33 Mountain]	B293062	267	1.00	10/25/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B292840 - EPA 537.1

Blank (B292840-BLK1)

Prepared: 10/20/21 Analyzed: 10/21/21

Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	36.4		ng/L	38.8		93.9	70-130			
Surrogate: M3HFPO-DA	37.1		ng/L	38.8		95.5	70-130			
Surrogate: 13C-PFDA	36.5		ng/L	38.8		94.0	70-130			
Surrogate: d5-NEtFOSAA	140		ng/L	155		90.1	70-130			

LCS (B292840-BS1)

Prepared: 10/20/21 Analyzed: 10/21/21

Perfluorobutanesulfonic acid (PFBS)	7.49	1.9	ng/L	8.53		87.7	70-130			
Perfluorohexanoic acid (PFHxA)	8.83	1.9	ng/L	9.62		91.8	70-130			
Perfluorohexanesulfonic acid (PFHxS)	8.40	1.9	ng/L	8.79		95.6	70-130			
Perfluoroheptanoic acid (PFHpA)	8.53	1.9	ng/L	9.62		88.7	70-130			
Perfluorooctanoic acid (PFOA)	8.74	1.9	ng/L	9.62		90.9	70-130			
Perfluorooctanesulfonic acid (PFOS)	8.36	1.9	ng/L	8.93		93.6	70-130			
Perfluorononanoic acid (PFNA)	8.50	1.9	ng/L	9.62		88.3	70-130			
Perfluorodecanoic acid (PFDA)	9.36	1.9	ng/L	9.62		97.3	70-130			
N-EtFOSAA	8.02	1.9	ng/L	9.62		83.4	70-130			
Perfluoroundecanoic acid (PFUnA)	9.18	1.9	ng/L	9.62		95.5	70-130			
N-MeFOSAA	7.98	1.9	ng/L	9.62		83.0	70-130			
Perfluorododecanoic acid (PFDoA)	8.78	1.9	ng/L	9.62		91.3	70-130			
Perfluorotridecanoic acid (PFTTrDA)	8.24	1.9	ng/L	9.62		85.6	70-130			
Perfluorotetradecanoic acid (PFTA)	7.81	1.9	ng/L	9.62		81.2	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	8.51	1.9	ng/L	9.62		88.5	70-130			
11Cl-PF3OUdS (F53B Minor)	7.76	1.9	ng/L	9.07		85.6	70-130			
9Cl-PF3ONS (F53B Major)	7.85	1.9	ng/L	8.98		87.5	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	8.22	1.9	ng/L	9.09		90.4	70-130			
Surrogate: 13C-PFHxA	37.6		ng/L	38.5		97.8	70-130			
Surrogate: M3HFPO-DA	38.3		ng/L	38.5		99.7	70-130			
Surrogate: 13C-PFDA	38.2		ng/L	38.5		99.2	70-130			
Surrogate: d5-NEtFOSAA	147		ng/L	154		95.7	70-130			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B293062 - EPA 537.1

Blank (B293062-BLK1)

Prepared: 10/25/21 Analyzed: 10/26/21

Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	39.3		ng/L	38.8		101	70-130			
Surrogate: M3HFPO-DA	35.2		ng/L	38.8		90.7	70-130			
Surrogate: 13C-PFDA	34.6		ng/L	38.8		89.2	70-130			
Surrogate: d5-NEtFOSAA	148		ng/L	155		95.4	70-130			

LCS (B293062-BS1)

Prepared: 10/25/21 Analyzed: 10/26/21

Perfluorobutanesulfonic acid (PFBS)	13.2	1.9	ng/L	16.9		78.2	70-130			
Perfluorohexanoic acid (PFHxA)	15.5	1.9	ng/L	19.1		81.0	70-130			
Perfluorohexanesulfonic acid (PFHxS)	14.0	1.9	ng/L	17.5		80.2	70-130			
Perfluoroheptanoic acid (PFHpA)	13.6	1.9	ng/L	19.1		71.0	70-130			
Perfluorooctanoic acid (PFOA)	15.0	1.9	ng/L	19.1		78.4	70-130			
Perfluorooctanesulfonic acid (PFOS)	14.0	1.9	ng/L	17.7		79.0	70-130			
Perfluorononanoic acid (PFNA)	13.5	1.9	ng/L	19.1		70.7	70-130			
Perfluorodecanoic acid (PFDA)	14.9	1.9	ng/L	19.1		78.1	70-130			
N-EtFOSAA	14.6	1.9	ng/L	19.1		76.6	70-130			
Perfluoroundecanoic acid (PFUnA)	15.6	1.9	ng/L	19.1		81.4	70-130			
N-MeFOSAA	15.3	1.9	ng/L	19.1		80.2	70-130			
Perfluorododecanoic acid (PFDoA)	15.2	1.9	ng/L	19.1		79.5	70-130			
Perfluorotridecanoic acid (PFTTrDA)	15.4	1.9	ng/L	19.1		80.6	70-130			
Perfluorotetradecanoic acid (PFTA)	15.6	1.9	ng/L	19.1		81.8	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	14.0	1.9	ng/L	19.1		73.5	70-130			
11Cl-PF3OUdS (F53B Minor)	15.1	1.9	ng/L	18.0		83.7	70-130			
9Cl-PF3ONS (F53B Major)	15.5	1.9	ng/L	17.8		87.2	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	13.9	1.9	ng/L	18.0		77.0	70-130			
Surrogate: 13C-PFHxA	33.0		ng/L	38.2		86.3	70-130			
Surrogate: M3HFPO-DA	29.4		ng/L	38.2		77.0	70-130			
Surrogate: 13C-PFDA	30.5		ng/L	38.2		79.9	70-130			
Surrogate: d5-NEtFOSAA	131		ng/L	153		85.6	70-130			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B293062 - EPA 537.1										
LCS Dup (B293062-BSD1)										
					Prepared: 10/25/21 Analyzed: 10/26/21					
Perfluorobutanesulfonic acid (PFBS)	13.6	1.9	ng/L	17.2		79.2	70-130	2.66	30	
Perfluorohexanoic acid (PFHxA)	16.3	1.9	ng/L	19.4		84.1	70-130	5.08	30	
Perfluorohexanesulfonic acid (PFHxS)	14.5	1.9	ng/L	17.7		82.1	70-130	3.69	30	
Perfluoroheptanoic acid (PFHpA)	14.4	1.9	ng/L	19.4		74.6	70-130	6.30	30	
Perfluorooctanoic acid (PFOA)	15.6	1.9	ng/L	19.4		80.6	70-130	4.11	30	
Perfluorooctanesulfonic acid (PFOS)	14.3	1.9	ng/L	18.0		79.7	70-130	2.31	30	
Perfluorononanoic acid (PFNA)	14.2	1.9	ng/L	19.4		73.3	70-130	5.07	30	
Perfluorodecanoic acid (PFDA)	15.9	1.9	ng/L	19.4		82.1	70-130	6.41	30	
N-EtFOSAA	15.7	1.9	ng/L	19.4		80.9	70-130	6.74	30	
Perfluoroundecanoic acid (PFUnA)	16.1	1.9	ng/L	19.4		83.3	70-130	3.59	30	
N-MeFOSAA	15.5	1.9	ng/L	19.4		80.2	70-130	1.43	30	
Perfluorododecanoic acid (PFDoA)	15.9	1.9	ng/L	19.4		82.1	70-130	4.65	30	
Perfluorotridecanoic acid (PFTrDA)	14.9	1.9	ng/L	19.4		76.7	70-130	3.56	30	
Perfluorotetradecanoic acid (PFTA)	14.6	1.9	ng/L	19.4		75.3	70-130	6.90	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	14.7	1.9	ng/L	19.4		75.8	70-130	4.35	30	
11Cl-PF3OUdS (F53B Minor)	15.9	1.9	ng/L	18.3		86.8	70-130	5.05	30	
9Cl-PF3ONS (F53B Major)	15.8	1.9	ng/L	18.1		87.3	70-130	1.55	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	14.5	1.9	ng/L	18.3		79.0	70-130	3.90	30	
Surrogate: 13C-PFHxA	36.5		ng/L	38.7		94.2	70-130			
Surrogate: M3HFPO-DA	32.9		ng/L	38.7		84.9	70-130			
Surrogate: 13C-PFDA	34.2		ng/L	38.7		88.2	70-130			
Surrogate: d5-NEtFOSAA	141		ng/L	155		91.0	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
PF-02	Surrogate recovery is outside of control limits. Re-extraction yielded similar surrogate non-conformance. Both results reported.

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JFC James F. Constantino
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BB2 Bethany M Bisnett

CONTINUING CALIBRATION CHECK

EPA 537.1

S064564-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	444	447	1.135859	1.166913		0.6	30
Perfluorohexanoic acid (PFHxA)	A	500	475	0.7557946	0.7473868		-4.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	430	0.9172992	0.87481		-5.9	30
Perfluoroheptanoic acid (PFHpA)	A	500	459	0.5186879	0.5126173		-8.2	30
Perfluorooctanoic acid (PFOA)	A	500	521	1.014466	1.054571		4.2	30
Perfluorooctanesulfonic acid (PFOS)	A	464	469	0.9546162	0.9821549		1.0	30
Perfluorononanoic acid (PFNA)	A	500	511	0.8583182	0.917936		2.2	30
Perfluorodecanoic acid (PFDA)	A	500	463	0.9883469	0.9436683		-7.3	30
N-EtFOSAA	A	500	474	0.8211978	0.8642344		-5.2	30
Perfluoroundecanoic acid (PFUnA)	A	500	526	1.00186	1.067819		5.3	30
N-MeFOSAA	A	500	477	0.9767918	1.018317		-4.6	30
Perfluorododecanoic acid (PFDoA)	A	500	431	1.175679	1.062875		-13.7	30
Perfluorotridecanoic acid (PFTrDA)	A	500	437	1.152766	1.075012		-12.7	30
Perfluorotetradecanoic acid (PFTA)	A	500	426	0.9718999	0.9007773		-14.8	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	602	1.628033E-02	2.022191E-02		20.5	30
11Cl-PF3OUdS (F53B Minor)	A	472	414	1.429084	1.383516		-12.3	30
9Cl-PF3ONS (F53B Major)	A	466	405	2.949299	2.850826		-13.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	431	1.373201	1.314253		-8.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064564-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2020	1.135859	1.057043		-8.9	30
Perfluorohexanoic acid (PFHxA)	A	2500	2290	0.7557946	0.7209404		-8.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2160	0.9172992	0.8818705		-5.2	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2210	0.5186879	0.4939743		-11.5	30
Perfluorooctanoic acid (PFOA)	A	2500	2540	1.014466	1.027227		1.5	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2270	0.9546162	0.9498457		-2.3	30
Perfluorononanoic acid (PFNA)	A	2500	2360	0.8583182	0.8460188		-5.8	30
Perfluorodecanoic acid (PFDA)	A	2500	2520	0.9883469	1.025504		0.7	30
N-EtFOSAA	A	2500	2370	0.8211978	0.8611559		-5.1	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2580	1.00186	1.049016		3.4	30
N-MeFOSAA	A	2500	2280	0.9767918	0.9710313		-8.8	30
Perfluorododecanoic acid (PFDoA)	A	2500	2440	1.175679	1.199709		-2.6	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2440	1.152766	1.199325		-2.6	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2390	0.9718999	1.010036		-4.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2210	1.628033E-02	0.0148711		-11.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2170	1.429084	1.449166		-8.0	30
9Cl-PF3ONS (F53B Major)	A	2330	2180	2.949299	3.056203		-6.5	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2240	1.373201	1.36719		-5.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2250	1.135859	1.175661		1.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2270	0.7557946	0.7128042		-9.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2210	0.9172992	0.9026665		-2.9	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2160	0.5186879	0.4819864		-13.7	30
Perfluorooctanoic acid (PFOA)	A	2500	2650	1.014466	1.07518		6.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2450	0.9546162	1.024945		5.4	30
Perfluorononanoic acid (PFNA)	A	2500	2550	0.8583182	0.9147195		1.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2710	0.9883469	1.105104		8.5	30
N-EtFOSAA	A	2500	2530	0.8211978	0.9177848		1.2	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2800	1.00186	1.134988		11.9	30
N-MeFOSAA	A	2500	2460	0.9767918	1.045588		-1.8	30
Perfluorododecanoic acid (PFDoA)	A	2500	2650	1.175679	1.305484		6.0	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2720	1.152766	1.336643		8.6	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2640	0.9718999	1.117673		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2420	1.628033E-02	1.622857E-02		-3.3	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2370	1.429084	1.580493		0.4	30
9Cl-PF3ONS (F53B Major)	A	2330	2380	2.949299	3.33391		2.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2240	1.373201	1.369497		-5.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	23000	1.135859	1.204066		3.8	30
Perfluorohexanoic acid (PFHxA)	A	25000	26700	0.7557946	0.8400239		6.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	24500	0.9172992	0.9985564		7.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	26100	0.5186879	0.5836485		4.5	30
Perfluorooctanoic acid (PFOA)	A	25000	26800	1.014466	1.086907		7.4	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	24700	0.9546162	1.034115		6.4	30
Perfluorononanoic acid (PFNA)	A	25000	26700	0.8583182	0.958436		6.8	30
Perfluorodecanoic acid (PFDA)	A	25000	28400	0.9883469	1.157711		13.7	30
N-EtFOSAA	A	25000	26200	0.8211978	0.8869809		4.8	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27700	1.00186	1.125429		10.9	30
N-MeFOSAA	A	25000	26500	0.9767918	1.0947		6.1	30
Perfluorododecanoic acid (PFDoA)	A	25000	27800	1.175679	1.371556		11.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	28400	1.152766	1.396505		13.5	30
Perfluorotetradecanoic acid (PFTA)	A	25000	28000	0.9718999	1.184497		12.0	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25700	1.628033E-02	1.727919E-02		2.9	30
11Cl-PF3OUdS (F53B Minor)	A	23600	27200	1.429084	1.756578		15.1	30
9Cl-PF3ONS (F53B Major)	A	23300	26100	2.949299	3.549062		12.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	25000	1.373201	1.528624		6.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2240	1.135859	1.169424		0.8	30
Perfluorohexanoic acid (PFHxA)	A	2500	2580	0.7557946	0.8109661		3.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2350	0.9172992	0.9588437		3.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2450	0.5186879	0.5468278		-2.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2630	1.014466	1.06544		5.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2370	0.9546162	0.992586		2.1	30
Perfluorononanoic acid (PFNA)	A	2500	2530	0.8583182	0.9099244		1.4	30
Perfluorodecanoic acid (PFDA)	A	2500	2820	0.9883469	1.147251		12.7	30
N-EtFOSAA	A	2500	2470	0.8211978	0.8944513		-1.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2840	1.00186	1.15277		13.6	30
N-MeFOSAA	A	2500	2430	0.9767918	1.036022		-2.7	30
Perfluorododecanoic acid (PFDoA)	A	2500	2670	1.175679	1.314604		6.7	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2720	1.152766	1.339952		8.9	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2720	0.9718999	1.152383		9.0	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2470	1.628033E-02	0.0166028		-1.1	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2400	1.429084	1.601682		1.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2340	2.949299	3.284328		0.5	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2450	1.373201	1.49829		4.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21600	1.135859	1.127881		-2.8	30
Perfluorohexanoic acid (PFHxA)	A	25000	26800	0.7557946	0.843118		7.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	24000	0.9172992	0.978684		5.2	30
Perfluoroheptanoic acid (PFHpA)	A	25000	26500	0.5186879	0.5925618		6.1	30
Perfluorooctanoic acid (PFOA)	A	25000	27000	1.014466	1.091847		7.8	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	24200	0.9546162	1.015027		4.4	30
Perfluorononanoic acid (PFNA)	A	25000	26900	0.8583182	0.9668927		7.7	30
Perfluorodecanoic acid (PFDA)	A	25000	28300	0.9883469	1.151287		13.1	30
N-EtFOSAA	A	25000	26300	0.8211978	0.8902964		5.2	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27800	1.00186	1.127115		11.1	30
N-MeFOSAA	A	25000	26300	0.9767918	1.083849		5.0	30
Perfluorododecanoic acid (PFDoA)	A	25000	27700	1.175679	1.364352		10.8	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	28200	1.152766	1.387405		12.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27700	0.9718999	1.172784		10.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25800	1.628033E-02	1.735632E-02		3.4	30
11Cl-PF3OUdS (F53B Minor)	A	23600	26000	1.429084	1.683193		10.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25500	2.949299	3.47103		9.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	25200	1.373201	1.537678		6.7	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064720-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	22000	1.205187	1.219675		-0.9	30
Perfluorohexanoic acid (PFHxA)	A	25000	25700	0.7174549	0.7639828		2.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	1.001704		2.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	23800	0.5131844	0.5144887		-4.8	30
Perfluorooctanoic acid (PFOA)	A	25000	25400	1.018894	1.068279		1.7	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23600	0.9862048	1.009655		1.8	30
Perfluorononanoic acid (PFNA)	A	25000	23700	0.9556153	0.9312701		-5.1	30
Perfluorodecanoic acid (PFDA)	A	25000	26200	1.019289	1.125386		4.9	30
N-EtFOSAA	A	25000	26000	0.7469728	0.7756554		3.9	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27400	0.9840387	1.11475		9.6	30
N-MeFOSAA	A	25000	25900	0.9030075	0.9658908		3.4	30
Perfluorododecanoic acid (PFDoA)	A	25000	27400	1.153654	1.347163		9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26900	1.231259	1.383697		7.4	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27100	1.033649	1.164994		8.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	23700	1.481833E-02	1.427195E-02		-5.1	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25800	1.641038	1.874904		9.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25200	3.518141	4.012609		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24000	1.350704	1.426229		1.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064720-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2210	1.205187	1.22414		-0.5	30
Perfluorohexanoic acid (PFHxA)	A	2500	2590	0.7174549	0.7712175		3.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2330	0.9422487	0.9984189		2.0	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2240	0.5131844	0.4832874		-10.6	30
Perfluorooctanoic acid (PFOA)	A	2500	2590	1.018894	1.08701		3.5	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2410	0.9862048	1.028799		3.7	30
Perfluorononanoic acid (PFNA)	A	2500	2350	0.9556153	0.9219887		-6.1	30
Perfluorodecanoic acid (PFDA)	A	2500	2540	1.019289	1.091552		1.7	30
N-EtFOSAA	A	2500	2550	0.7469728	0.7871024		1.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2790	0.9840387	1.135784		11.7	30
N-MeFOSAA	A	2500	2640	0.9030075	0.95937		5.7	30
Perfluorododecanoic acid (PFDoA)	A	2500	2680	1.153654	1.321405		7.4	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2620	1.231259	1.351363		4.9	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2680	1.033649	1.152086		7.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2500	1.481833E-02	1.506144E-02		0.2	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2640	1.641038	1.836929		11.9	30
9Cl-PF3ONS (F53B Major)	A	2330	2650	3.518141	3.998773		13.7	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2420	1.350704	1.436838		2.5	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
Tighe & Bond
170 Front Street, Worcester, MA 01610
Phone: 508-754-2201
Project Location: Princeton, MA
Project Number: P-0534017
Project Manager: Jeff Arps/Michael Scherer
Pace Analytical Quote Name/Number
Invoice Recipient: Tighe & Bond
Sampled By: M. Scherer

REQUIRED INFORMATION
7-Day 10-Day Field Filtered
PFAS 10-Day (Std) Due Date:
1-Day 3-Day Field Filtered
2-Day 4-Day Lab to Filter
Format: PDF EXCEL
Other: **PCB ONLY**
CLP Like Data Pkg Required:
Email To: mischeler@tighebond.com SOXHLET
Fax To #: NON SOXHLET

ANALYSIS REQUESTED

2 Preservation Code	1 = Iced	H = HCL	M = Methanol	N = Nitric Acid	S = Sulfuric Acid	B = Sodium Bisulfate	X = Sodium Hydroxide	T = Sodium Thiosulfate	O = Other (please define)
1 Matrix Codes:	GW = Ground Water	WW = Waste Water	DW = Drinking Water	A = Air	S = Soil	SL = Sludge	SOL = Solid	O = Other (please define)	

*Pace Analytical is not responsible for missing samples from prepacked coolers

Glassware in the fridge? Y / N

Glassware in freezer? Y / N

Prepacked Cooler? Y / N

Pace Analytical Work Order #	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP / GRAB	Matrix Code	Conc. Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
	33 Mountain	10/18/21	1200	GRAB	DW	U	2				

1 = Iced	H = HCL	M = Methanol	N = Nitric Acid	S = Sulfuric Acid	B = Sodium Bisulfate	X = Sodium Hydroxide	T = Sodium Thiosulfate	O = Other (please define)
GW = Ground Water	WW = Waste Water	DW = Drinking Water	A = Air	S = Soil	SL = Sludge	SOL = Solid	O = Other (please define)	

Client Comments: Please report the 14 compound list

Date/Time: 10/18/21 1500
Date/Time: 10/19/21 1015
Date/Time: 10/19/21 1550
Date/Time: 10/19/21 1550

MA MCP Required
MCP Certification Form Required
CT RCP Required
RCP Certification Form Required
MA State Env Required

Special Requirements

MA MCP Required
MCP Certification Form Required
CT RCP Required
RCP Certification Form Required
MA State Env Required

PWSID #

Project Entity

Government Municipality WRTA
Federal 21 J School Chromatogram
City Brownfield MBTA AIHA-LAP, LLC

Received by: (signature) _____ Date/Time: _____
Relinquished by: (signature) _____ Date/Time: _____
Received by: (signature) _____ Date/Time: _____
Relinquished by: (signature) _____ Date/Time: _____
Received by: (signature) _____ Date/Time: _____
Relinquished by: (signature) _____ Date/Time: _____

Comments: _____

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T E B
 Received By ML Date 10/19/21 Time 1550
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

P-0534
November 24, 2021

Eleanor Toupin
35 Hubbardston Road
Princeton, Massachusetts 01541

Re: **Residential Well Sampling**
35 Hubbardston Road, Princeton

Dear Mrs. Toupin:

Enclosed is a copy of the laboratory analytical results for the groundwater samples collected from the residential well located at 35 Hubbardston Road as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the residential well water sample on October 18, 2021, and Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts analyzed the sample for per- and polyfluoroalkyl substances (PFAS). Con Test is a Massachusetts certified environmental laboratory.

A copy of the lab report is attached to this letter. Analytical results have been compared to MassDEP's drinking water Maximum Contaminant Level (MCL) of 20 nanograms per liter (ng/L), or parts per trillion (ppt), for the sum of six regulated PFAS compounds (PFAS6).

Your laboratory results indicate that the PFAS6 concentration is 37.9 ng/L in the water sample collected on April 26, 2021, which is above the MassDEP MCL of 20 ng/L.

Based on the PFAS concentration detected in your well, MassDEP has determined that your water supply should not be used in the long-term without treatment. Therefore, MassDEP is requiring the Town of Princeton to provide you with bottled water temporarily while we work with you to install a point-of-entry treatment (POET) system that will remove PFAS from your well water. This system will be sampled within the first month of operation and on an annual basis thereafter.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, with any questions.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup





Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____
2. MCP phase of work during which the sampling will be/has been conducted:
- | | |
|--|---|
| Immediate Response Action | Phase III Feasibility Evaluation |
| Release Abatement Measure | Phase IV Remedy Implementation Plan |
| Utility-related Abatement Measure | Phase V/Remedy Operation Status |
| Phase I Initial Site Investigation | Post-Temporary Solution Operation, Maintenance and Monitoring |
| Phase II Comprehensive Site Assessment | Other _____ |
- (specify)
3. Description of property where sampling will be/has been conducted:
residential commercial industrial school/playground Other _____
(specify)
4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

 -

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	35 Hubbardston Rd		
		11/11/2020	4/26/2021	10/18/2021
Well Depth (feet)		UNKNOWN		
Sampling Date				
<i>EPA 537.1 (ng/L)</i>				
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	2.6
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	4.9
Perfluorooctanoic acid (PFOA)		7.5	8.9	17
Perfluorooctanesulfonic acid (PFOS)		8.4	8.2	16
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		15.9	17.1	40.5
Regulated Total	20	15.9	17.1	37.9

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

October 25, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

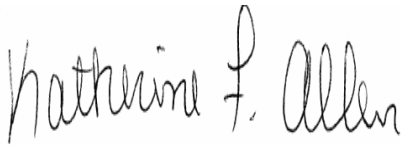
Project Location: 35 Hubbardston, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1137

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/25/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1137

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 35 Hubbardston, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
35 Hubbardston	21J1137-01	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 35 Hubbardston, Princeton, MA

Sample Description:

Work Order: 21J1137

Date Received: 10/19/2021

Field Sample #: 35 Hubbardston

Sampled: 10/18/2021 12:00

Sample ID: 21J1137-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:39	BLH
Perfluorohexanoic acid (PFHxA)	2.6	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:39	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:39	BLH
Perfluoroheptanoic acid (PFHpA)	4.9	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:39	BLH
Perfluorooctanoic acid (PFOA)	17	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:39	BLH
Perfluorooctanesulfonic acid (PFOS)	16	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:39	BLH
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:39	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:39	BLH
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:39	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:39	BLH
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:39	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:39	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:39	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:39	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:39	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:39	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:39	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:39	BLH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
13C-PFHxA	76.8	70-130	10/21/21 21:39
M3HFPO-DA	73.4	70-130	10/21/21 21:39
13C-PFDA	92.0	70-130	10/21/21 21:39
d5-NEtFOSAA	85.5	70-130	10/21/21 21:39

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1137-01 [35 Hubbardston]	B292840	270	1.00	10/20/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292840 - EPA 537.1										
Blank (B292840-BLK1)										
Prepared: 10/20/21 Analyzed: 10/21/21										
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	36.4		ng/L	38.8		93.9	70-130			
Surrogate: M3HFPO-DA	37.1		ng/L	38.8		95.5	70-130			
Surrogate: 13C-PFDA	36.5		ng/L	38.8		94.0	70-130			
Surrogate: d5-NEtFOSAA	140		ng/L	155		90.1	70-130			
LCS (B292840-BS1)										
Prepared: 10/20/21 Analyzed: 10/21/21										
Perfluorobutanesulfonic acid (PFBS)	7.49	1.9	ng/L	8.53		87.7	70-130			
Perfluorohexanoic acid (PFHxA)	8.83	1.9	ng/L	9.62		91.8	70-130			
Perfluorohexanesulfonic acid (PFHxS)	8.40	1.9	ng/L	8.79		95.6	70-130			
Perfluoroheptanoic acid (PFHpA)	8.53	1.9	ng/L	9.62		88.7	70-130			
Perfluorooctanoic acid (PFOA)	8.74	1.9	ng/L	9.62		90.9	70-130			
Perfluorooctanesulfonic acid (PFOS)	8.36	1.9	ng/L	8.93		93.6	70-130			
Perfluorononanoic acid (PFNA)	8.50	1.9	ng/L	9.62		88.3	70-130			
Perfluorodecanoic acid (PFDA)	9.36	1.9	ng/L	9.62		97.3	70-130			
N-EtFOSAA	8.02	1.9	ng/L	9.62		83.4	70-130			
Perfluoroundecanoic acid (PFUnA)	9.18	1.9	ng/L	9.62		95.5	70-130			
N-MeFOSAA	7.98	1.9	ng/L	9.62		83.0	70-130			
Perfluorododecanoic acid (PFDoA)	8.78	1.9	ng/L	9.62		91.3	70-130			
Perfluorotridecanoic acid (PFTTrDA)	8.24	1.9	ng/L	9.62		85.6	70-130			
Perfluorotetradecanoic acid (PFTA)	7.81	1.9	ng/L	9.62		81.2	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	8.51	1.9	ng/L	9.62		88.5	70-130			
11Cl-PF3OUdS (F53B Minor)	7.76	1.9	ng/L	9.07		85.6	70-130			
9Cl-PF3ONS (F53B Major)	7.85	1.9	ng/L	8.98		87.5	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	8.22	1.9	ng/L	9.09		90.4	70-130			
Surrogate: 13C-PFHxA	37.6		ng/L	38.5		97.8	70-130			
Surrogate: M3HFPO-DA	38.3		ng/L	38.5		99.7	70-130			
Surrogate: 13C-PFDA	38.2		ng/L	38.5		99.2	70-130			
Surrogate: d5-NEtFOSAA	147		ng/L	154		95.7	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JFC James F. Constantino
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BB2 Bethany M Bisnett

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2250	1.135859	1.175661		1.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2270	0.7557946	0.7128042		-9.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2210	0.9172992	0.9026665		-2.9	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2160	0.5186879	0.4819864		-13.7	30
Perfluorooctanoic acid (PFOA)	A	2500	2650	1.014466	1.07518		6.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2450	0.9546162	1.024945		5.4	30
Perfluorononanoic acid (PFNA)	A	2500	2550	0.8583182	0.9147195		1.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2710	0.9883469	1.105104		8.5	30
N-EtFOSAA	A	2500	2530	0.8211978	0.9177848		1.2	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2800	1.00186	1.134988		11.9	30
N-MeFOSAA	A	2500	2460	0.9767918	1.045588		-1.8	30
Perfluorododecanoic acid (PFDoA)	A	2500	2650	1.175679	1.305484		6.0	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2720	1.152766	1.336643		8.6	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2640	0.9718999	1.117673		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2420	1.628033E-02	1.622857E-02		-3.3	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2370	1.429084	1.580493		0.4	30
9Cl-PF3ONS (F53B Major)	A	2330	2380	2.949299	3.33391		2.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2240	1.373201	1.369497		-5.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	23000	1.135859	1.204066		3.8	30
Perfluorohexanoic acid (PFHxA)	A	25000	26700	0.7557946	0.8400239		6.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	24500	0.9172992	0.9985564		7.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	26100	0.5186879	0.5836485		4.5	30
Perfluorooctanoic acid (PFOA)	A	25000	26800	1.014466	1.086907		7.4	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	24700	0.9546162	1.034115		6.4	30
Perfluorononanoic acid (PFNA)	A	25000	26700	0.8583182	0.958436		6.8	30
Perfluorodecanoic acid (PFDA)	A	25000	28400	0.9883469	1.157711		13.7	30
N-EtFOSAA	A	25000	26200	0.8211978	0.8869809		4.8	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27700	1.00186	1.125429		10.9	30
N-MeFOSAA	A	25000	26500	0.9767918	1.0947		6.1	30
Perfluorododecanoic acid (PFDoA)	A	25000	27800	1.175679	1.371556		11.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	28400	1.152766	1.396505		13.5	30
Perfluorotetradecanoic acid (PFTA)	A	25000	28000	0.9718999	1.184497		12.0	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25700	1.628033E-02	1.727919E-02		2.9	30
11Cl-PF3OUdS (F53B Minor)	A	23600	27200	1.429084	1.756578		15.1	30
9Cl-PF3ONS (F53B Major)	A	23300	26100	2.949299	3.549062		12.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	25000	1.373201	1.528624		6.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2240	1.135859	1.169424		0.8	30
Perfluorohexanoic acid (PFHxA)	A	2500	2580	0.7557946	0.8109661		3.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2350	0.9172992	0.9588437		3.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2450	0.5186879	0.5468278		-2.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2630	1.014466	1.06544		5.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2370	0.9546162	0.992586		2.1	30
Perfluorononanoic acid (PFNA)	A	2500	2530	0.8583182	0.9099244		1.4	30
Perfluorodecanoic acid (PFDA)	A	2500	2820	0.9883469	1.147251		12.7	30
N-EtFOSAA	A	2500	2470	0.8211978	0.8944513		-1.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2840	1.00186	1.15277		13.6	30
N-MeFOSAA	A	2500	2430	0.9767918	1.036022		-2.7	30
Perfluorododecanoic acid (PFDoA)	A	2500	2670	1.175679	1.314604		6.7	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2720	1.152766	1.339952		8.9	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2720	0.9718999	1.152383		9.0	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2470	1.628033E-02	0.0166028		-1.1	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2400	1.429084	1.601682		1.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2340	2.949299	3.284328		0.5	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2450	1.373201	1.49829		4.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21600	1.135859	1.127881		-2.8	30
Perfluorohexanoic acid (PFHxA)	A	25000	26800	0.7557946	0.843118		7.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	24000	0.9172992	0.978684		5.2	30
Perfluoroheptanoic acid (PFHpA)	A	25000	26500	0.5186879	0.5925618		6.1	30
Perfluorooctanoic acid (PFOA)	A	25000	27000	1.014466	1.091847		7.8	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	24200	0.9546162	1.015027		4.4	30
Perfluorononanoic acid (PFNA)	A	25000	26900	0.8583182	0.9668927		7.7	30
Perfluorodecanoic acid (PFDA)	A	25000	28300	0.9883469	1.151287		13.1	30
N-EtFOSAA	A	25000	26300	0.8211978	0.8902964		5.2	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27800	1.00186	1.127115		11.1	30
N-MeFOSAA	A	25000	26300	0.9767918	1.083849		5.0	30
Perfluorododecanoic acid (PFDoA)	A	25000	27700	1.175679	1.364352		10.8	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	28200	1.152766	1.387405		12.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27700	0.9718999	1.172784		10.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25800	1.628033E-02	1.735632E-02		3.4	30
11Cl-PF3OUdS (F53B Minor)	A	23600	26000	1.429084	1.683193		10.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25500	2.949299	3.47103		9.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	25200	1.373201	1.537678		6.7	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

Phone: 612-607-6400
 Fax: 612-607-6344

2151137

CHAIN OF CUSTODY RECORD

1800 Elm Street SE
 Minneapolis, MN 55414

Page 1 of 1

ANALYSIS REQUESTED

Sample ID / Description	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	Preservation Code	Matrix Codes	Preservation Codes
	35 Hubbard st	10/19/15	10/19/15	GW1	U	2					1 = Iced	H = HCL	H = High
												M = Methanol	M = Medium
												N = Nitric Acid	L = Low
												S = Sulfuric Acid	C = Clean
												B = Sodium Bisulfate	U = Unknown
												X = Sodium Hydroxide	
												T = Sodium Thiocyanate	
												O = Other (please define)	

Client Comments: Please report the 14 compound list

Relinquished by (signature): [Signature] Date/Time: 10/19/15 1530

Received by (signature): [Signature] Date/Time: 10/19/15 1550

Relinquished by (signature): [Signature] Date/Time: 10/19/15 1550

Received by (signature): [Signature] Date/Time: 10/19/15 1550

Special Requirements:
 MA MCP Required
 MCP Certifications Form Required
 CT RCP Required
 RCP Certifications Form Required
 MA State DW Required

Project Entity:

Government Municipality WRTA Other

Federal 21 J School MBTA Chromatogram

City Brownfield MBTA AIHA-LAP, LLC

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T E B

Received By GL Date 10/19/11 Time 1550

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? _____

Are there Rushes? F Who was notified? _____

Are there Short Holds? F Who was notified? _____

Is there enough Volume? T

Is there Headspace where applicable? NA MS/MSD? F

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? F On COC? F

Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

P-0534
November 24, 2021

Judy Sturges
255 Promenade Street
Unit 44
Providence, Rhode Island 02908

Re: **Residential Well Sampling**
36 Hubbardston Road, Princeton

Dear Ms. Sturges:

Enclosed is a copy of the laboratory analytical results for the water sample collected from the residential well located at 36 Hubbardston Road as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the residential well water sample on October 18, 2021, and Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts analyzed the sample for per- and polyfluoroalkyl substances (PFAS). Con Test is a Massachusetts-certified environmental laboratory.

Your laboratory results indicate that PFAS was not detected above laboratory reporting limits in the water samples collected on October 18, 2021; however, since PFAS were previously detected in your well, you will continue to receive bottled water from the Town. A copy of the laboratory report is attached to this letter.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, with any questions.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____
2. MCP phase of work during which the sampling will be/has been conducted:
- | | |
|--|---|
| Immediate Response Action | Phase III Feasibility Evaluation |
| Release Abatement Measure | Phase IV Remedy Implementation Plan |
| Utility-related Abatement Measure | Phase V/Remedy Operation Status |
| Phase I Initial Site Investigation | Post-Temporary Solution Operation, Maintenance and Monitoring |
| Phase II Comprehensive Site Assessment | Other _____
(specify) |
3. Description of property where sampling will be/has been conducted:
residential commercial industrial school/playground Other _____
(specify)
4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

-

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	36 Hubbardston Rd				
		UNKNOWN				
Well Depth (feet)		2/6/2020	7/22/2020	1/21/2021	4/27/2021	10/18/2021
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	5.4	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	5.0	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	10.4	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20	ND (2.0)	10.4	ND (2.0)	ND (2.0)	ND (2.0)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

October 25, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

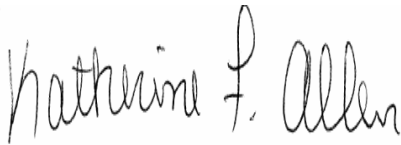
Project Location: 36 Hubbardston, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1130

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/25/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1130

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 36 Hubbardston, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
36 Hubbardston	21J1130-01	Drinking Water		EPA 537.1	
36 Hubbardston FB	21J1130-02	Drinking Water		EPA 537.1	
TB-10182021	21J1130-03	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative

Project Location: 36 Hubbardston, Princeton, MA

Sample Description:

Work Order: 21J1130

Date Received: 10/19/2021

Field Sample #: 36 Hubbardston

Sampled: 10/18/2021 12:00

Sample ID: 21J1130-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:35	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:35	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:35	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:35	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:35	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:35	BLH
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:35	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:35	BLH
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:35	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:35	BLH
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:35	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:35	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:35	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:35	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:35	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:35	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:35	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:35	BLH
Surrogates		% Recovery		Recovery Limits		Flag/Qual				
13C-PFHxA		76.2		70-130					10/21/21 20:35	
M3HFPO-DA		73.5		70-130					10/21/21 20:35	
13C-PFDA		88.3		70-130					10/21/21 20:35	
d5-NEtFOSAA		77.1		70-130					10/21/21 20:35	

Project Location: 36 Hubbardston, Princeton, MA

Sample Description:

Work Order: 21J1130

Date Received: 10/19/2021

Field Sample #: 36 Hubbardston FB

Sampled: 10/18/2021 12:00

Sample ID: 21J1130-02

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:42	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:42	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:42	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:42	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:42	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:42	BLH
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:42	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:42	BLH
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:42	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:42	BLH
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:42	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:42	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:42	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:42	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:42	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:42	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:42	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 20:42	BLH
Surrogates		% Recovery		Recovery Limits		Flag/Qual				
13C-PFHxA		94.3		70-130					10/21/21 20:42	
M3HFPO-DA		95.4		70-130					10/21/21 20:42	
13C-PFDA		95.8		70-130					10/21/21 20:42	
d5-NEtFOSAA		89.7		70-130					10/21/21 20:42	

Project Location: 36 Hubbardston, Princeton, MA

Sample Description:

Work Order: 21J1130

Date Received: 10/19/2021

Field Sample #: TB-10182021

Sampled: 10/18/2021 12:00

Sample ID: 21J1130-03

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:23	JFC
Perfluorohexanoic acid (PFHxA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:23	JFC
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:23	JFC
Perfluoroheptanoic acid (PFHpA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:23	JFC
Perfluorooctanoic acid (PFOA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:23	JFC
Perfluorooctanesulfonic acid (PFOS)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:23	JFC
Perfluorononanoic acid (PFNA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:23	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:23	JFC
N-EtFOSAA	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:23	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:23	JFC
N-MeFOSAA	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:23	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:23	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:23	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:23	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:23	JFC
11Cl-PF3OUdS (F53B Minor)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:23	JFC
9Cl-PF3ONS (F53B Major)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:23	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:23	JFC

Surrogates	% Recovery	Recovery Limits	Flag/Qual
13C-PFHxA	97.8	70-130	10/22/21 12:23
M3HFPO-DA	97.2	70-130	10/22/21 12:23
13C-PFDA	89.4	70-130	10/22/21 12:23
d5-NEtFOSAA	89.6	70-130	10/22/21 12:23

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1130-01 [36 Hubbardston]	B292840	259	1.00	10/20/21
21J1130-02 [36 Hubbardston FB]	B292840	264	1.00	10/20/21
21J1130-03 [TB-10182021]	B292840	252	1.00	10/20/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B292840 - EPA 537.1

Blank (B292840-BLK1)

Prepared: 10/20/21 Analyzed: 10/21/21

Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	36.4		ng/L	38.8		93.9	70-130			
Surrogate: M3HFPO-DA	37.1		ng/L	38.8		95.5	70-130			
Surrogate: 13C-PFDA	36.5		ng/L	38.8		94.0	70-130			
Surrogate: d5-NEtFOSAA	140		ng/L	155		90.1	70-130			

LCS (B292840-BS1)

Prepared: 10/20/21 Analyzed: 10/21/21

Perfluorobutanesulfonic acid (PFBS)	7.49	1.9	ng/L	8.53		87.7	70-130			
Perfluorohexanoic acid (PFHxA)	8.83	1.9	ng/L	9.62		91.8	70-130			
Perfluorohexanesulfonic acid (PFHxS)	8.40	1.9	ng/L	8.79		95.6	70-130			
Perfluoroheptanoic acid (PFHpA)	8.53	1.9	ng/L	9.62		88.7	70-130			
Perfluorooctanoic acid (PFOA)	8.74	1.9	ng/L	9.62		90.9	70-130			
Perfluorooctanesulfonic acid (PFOS)	8.36	1.9	ng/L	8.93		93.6	70-130			
Perfluorononanoic acid (PFNA)	8.50	1.9	ng/L	9.62		88.3	70-130			
Perfluorodecanoic acid (PFDA)	9.36	1.9	ng/L	9.62		97.3	70-130			
N-EtFOSAA	8.02	1.9	ng/L	9.62		83.4	70-130			
Perfluoroundecanoic acid (PFUnA)	9.18	1.9	ng/L	9.62		95.5	70-130			
N-MeFOSAA	7.98	1.9	ng/L	9.62		83.0	70-130			
Perfluorododecanoic acid (PFDoA)	8.78	1.9	ng/L	9.62		91.3	70-130			
Perfluorotridecanoic acid (PFTTrDA)	8.24	1.9	ng/L	9.62		85.6	70-130			
Perfluorotetradecanoic acid (PFTA)	7.81	1.9	ng/L	9.62		81.2	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	8.51	1.9	ng/L	9.62		88.5	70-130			
11Cl-PF3OUdS (F53B Minor)	7.76	1.9	ng/L	9.07		85.6	70-130			
9Cl-PF3ONS (F53B Major)	7.85	1.9	ng/L	8.98		87.5	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	8.22	1.9	ng/L	9.09		90.4	70-130			
Surrogate: 13C-PFHxA	37.6		ng/L	38.5		97.8	70-130			
Surrogate: M3HFPO-DA	38.3		ng/L	38.5		99.7	70-130			
Surrogate: 13C-PFDA	38.2		ng/L	38.5		99.2	70-130			
Surrogate: d5-NEtFOSAA	147		ng/L	154		95.7	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JFC James F. Constantino
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BB2 Bethany M Bisnett

CONTINUING CALIBRATION CHECK

EPA 537.1

S064564-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	444	447	1.135859	1.166913		0.6	30
Perfluorohexanoic acid (PFHxA)	A	500	475	0.7557946	0.7473868		-4.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	430	0.9172992	0.87481		-5.9	30
Perfluoroheptanoic acid (PFHpA)	A	500	459	0.5186879	0.5126173		-8.2	30
Perfluorooctanoic acid (PFOA)	A	500	521	1.014466	1.054571		4.2	30
Perfluorooctanesulfonic acid (PFOS)	A	464	469	0.9546162	0.9821549		1.0	30
Perfluorononanoic acid (PFNA)	A	500	511	0.8583182	0.917936		2.2	30
Perfluorodecanoic acid (PFDA)	A	500	463	0.9883469	0.9436683		-7.3	30
N-EtFOSAA	A	500	474	0.8211978	0.8642344		-5.2	30
Perfluoroundecanoic acid (PFUnA)	A	500	526	1.00186	1.067819		5.3	30
N-MeFOSAA	A	500	477	0.9767918	1.018317		-4.6	30
Perfluorododecanoic acid (PFDoA)	A	500	431	1.175679	1.062875		-13.7	30
Perfluorotridecanoic acid (PFTrDA)	A	500	437	1.152766	1.075012		-12.7	30
Perfluorotetradecanoic acid (PFTA)	A	500	426	0.9718999	0.9007773		-14.8	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	602	1.628033E-02	2.022191E-02		20.5	30
11Cl-PF3OUdS (F53B Minor)	A	472	414	1.429084	1.383516		-12.3	30
9Cl-PF3ONS (F53B Major)	A	466	405	2.949299	2.850826		-13.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	431	1.373201	1.314253		-8.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064564-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2020	1.135859	1.057043		-8.9	30
Perfluorohexanoic acid (PFHxA)	A	2500	2290	0.7557946	0.7209404		-8.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2160	0.9172992	0.8818705		-5.2	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2210	0.5186879	0.4939743		-11.5	30
Perfluorooctanoic acid (PFOA)	A	2500	2540	1.014466	1.027227		1.5	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2270	0.9546162	0.9498457		-2.3	30
Perfluorononanoic acid (PFNA)	A	2500	2360	0.8583182	0.8460188		-5.8	30
Perfluorodecanoic acid (PFDA)	A	2500	2520	0.9883469	1.025504		0.7	30
N-EtFOSAA	A	2500	2370	0.8211978	0.8611559		-5.1	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2580	1.00186	1.049016		3.4	30
N-MeFOSAA	A	2500	2280	0.9767918	0.9710313		-8.8	30
Perfluorododecanoic acid (PFDoA)	A	2500	2440	1.175679	1.199709		-2.6	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2440	1.152766	1.199325		-2.6	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2390	0.9718999	1.010036		-4.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2210	1.628033E-02	0.0148711		-11.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2170	1.429084	1.449166		-8.0	30
9Cl-PF3ONS (F53B Major)	A	2330	2180	2.949299	3.056203		-6.5	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2240	1.373201	1.36719		-5.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2250	1.135859	1.175661		1.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2270	0.7557946	0.7128042		-9.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2210	0.9172992	0.9026665		-2.9	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2160	0.5186879	0.4819864		-13.7	30
Perfluorooctanoic acid (PFOA)	A	2500	2650	1.014466	1.07518		6.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2450	0.9546162	1.024945		5.4	30
Perfluorononanoic acid (PFNA)	A	2500	2550	0.8583182	0.9147195		1.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2710	0.9883469	1.105104		8.5	30
N-EtFOSAA	A	2500	2530	0.8211978	0.9177848		1.2	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2800	1.00186	1.134988		11.9	30
N-MeFOSAA	A	2500	2460	0.9767918	1.045588		-1.8	30
Perfluorododecanoic acid (PFDoA)	A	2500	2650	1.175679	1.305484		6.0	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2720	1.152766	1.336643		8.6	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2640	0.9718999	1.117673		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2420	1.628033E-02	1.622857E-02		-3.3	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2370	1.429084	1.580493		0.4	30
9Cl-PF3ONS (F53B Major)	A	2330	2380	2.949299	3.33391		2.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2240	1.373201	1.369497		-5.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	23000	1.135859	1.204066		3.8	30
Perfluorohexanoic acid (PFHxA)	A	25000	26700	0.7557946	0.8400239		6.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	24500	0.9172992	0.9985564		7.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	26100	0.5186879	0.5836485		4.5	30
Perfluorooctanoic acid (PFOA)	A	25000	26800	1.014466	1.086907		7.4	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	24700	0.9546162	1.034115		6.4	30
Perfluorononanoic acid (PFNA)	A	25000	26700	0.8583182	0.958436		6.8	30
Perfluorodecanoic acid (PFDA)	A	25000	28400	0.9883469	1.157711		13.7	30
N-EtFOSAA	A	25000	26200	0.8211978	0.8869809		4.8	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27700	1.00186	1.125429		10.9	30
N-MeFOSAA	A	25000	26500	0.9767918	1.0947		6.1	30
Perfluorododecanoic acid (PFDoA)	A	25000	27800	1.175679	1.371556		11.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	28400	1.152766	1.396505		13.5	30
Perfluorotetradecanoic acid (PFTA)	A	25000	28000	0.9718999	1.184497		12.0	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25700	1.628033E-02	1.727919E-02		2.9	30
11Cl-PF3OUdS (F53B Minor)	A	23600	27200	1.429084	1.756578		15.1	30
9Cl-PF3ONS (F53B Major)	A	23300	26100	2.949299	3.549062		12.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	25000	1.373201	1.528624		6.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2240	1.135859	1.169424		0.8	30
Perfluorohexanoic acid (PFHxA)	A	2500	2580	0.7557946	0.8109661		3.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2350	0.9172992	0.9588437		3.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2450	0.5186879	0.5468278		-2.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2630	1.014466	1.06544		5.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2370	0.9546162	0.992586		2.1	30
Perfluorononanoic acid (PFNA)	A	2500	2530	0.8583182	0.9099244		1.4	30
Perfluorodecanoic acid (PFDA)	A	2500	2820	0.9883469	1.147251		12.7	30
N-EtFOSAA	A	2500	2470	0.8211978	0.8944513		-1.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2840	1.00186	1.15277		13.6	30
N-MeFOSAA	A	2500	2430	0.9767918	1.036022		-2.7	30
Perfluorododecanoic acid (PFDoA)	A	2500	2670	1.175679	1.314604		6.7	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2720	1.152766	1.339952		8.9	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2720	0.9718999	1.152383		9.0	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2470	1.628033E-02	0.0166028		-1.1	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2400	1.429084	1.601682		1.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2340	2.949299	3.284328		0.5	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2450	1.373201	1.49829		4.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21600	1.135859	1.127881		-2.8	30
Perfluorohexanoic acid (PFHxA)	A	25000	26800	0.7557946	0.843118		7.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	24000	0.9172992	0.978684		5.2	30
Perfluoroheptanoic acid (PFHpA)	A	25000	26500	0.5186879	0.5925618		6.1	30
Perfluorooctanoic acid (PFOA)	A	25000	27000	1.014466	1.091847		7.8	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	24200	0.9546162	1.015027		4.4	30
Perfluorononanoic acid (PFNA)	A	25000	26900	0.8583182	0.9668927		7.7	30
Perfluorodecanoic acid (PFDA)	A	25000	28300	0.9883469	1.151287		13.1	30
N-EtFOSAA	A	25000	26300	0.8211978	0.8902964		5.2	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27800	1.00186	1.127115		11.1	30
N-MeFOSAA	A	25000	26300	0.9767918	1.083849		5.0	30
Perfluorododecanoic acid (PFDoA)	A	25000	27700	1.175679	1.364352		10.8	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	28200	1.152766	1.387405		12.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27700	0.9718999	1.172784		10.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25800	1.628033E-02	1.735632E-02		3.4	30
11Cl-PF3OUdS (F53B Minor)	A	23600	26000	1.429084	1.683193		10.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25500	2.949299	3.47103		9.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	25200	1.373201	1.537678		6.7	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>

Tighe & Bond

120 Front Street, Worcester, MA 01610

Phone: 508-754-2201

Project Location: Princeton Private Well Sampling

Project Location: Princeton, MA

Project Number: P-0534017

Project Manager: Jeff Arps/Michael Scherer

Pace Analytical Quote Name/Number

Invoice Recipient: Tighe & Bond

Sampled By: M. Scherer

7 Day 10 Day Field Filtered
 PFAS 10 Day (std) Due Date: Lab to Filter
 1-Day 3-Day Field Filtered
 2-Day 4-Day Lab to Filter
 Format: PDF EXCEL
 Other: SOXHLET
 CLP Like Data Pkg Required:
 Email To: mjscherer@tighebond.com NON SOXHLET
 Fax To #:

Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
36 HOBBAARDSON	10/19/21	1200	GRAB	DW	U	2				
36 HOBBAARDSON FB	U		U			1				
TB-10182021			U			1				

Retention Time: (signature) Date/Time: 10/19/21 1500
 Received by: (signature) Date/Time: 10/19/21 1015
 Relinquished by: (signature) Date/Time: 10/19/21 1550
 Received by: (signature) Date/Time: 10/19/21 1550
 Relinquished by: (signature) Date/Time: 10/19/21 1550

Client Comments: Please report the 14 compound list

MA MCP Required
 MCP Certification Form Required
 CT RCP Required
 RCP Certification Form Required
 MA State DW Required

Project Entity: Government Municipality 21 J Brownfield
 Federal City

Other: Chromatogram AIHA-LAP, LLC
 WRTA School MBTA

Retained by: (signature) Date/Time:
 Relinquished by: (signature) Date/Time:
 Received by: (signature) Date/Time:
 Relinquished by: (signature) Date/Time:
 Comments:

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T & B
 Received By ML Date 10/19/21 Time 1550
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? RT On COC? RT
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

P-0534
November 29, 2021

Thomas and Lucile Daly
40 Boylston Ave
Princeton, Massachusetts 01541

Re: **Residential Well Sampling
40 Boylston Ave, Princeton**

Dear Mr. and Mrs. Daly:

Enclosed is a copy of the laboratory analytical results for the water samples collected from the residential well located at 40 Boylston Ave as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the residential well water sample on October 14, 2021, and Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts analyzed the samples for per- and polyfluoroalkyl substances (PFAS). Con Test is a Massachusetts certified environmental laboratory.

A copy of the lab report is attached to this letter. Analytical results have been compared to MassDEP's drinking water Maximum Contaminant Level (MCL) and Method 1/GW-1 standard of 20 nanograms per liter (ng/L), or parts per trillion (ppt), for the combined total of six specific PFAS compounds (PFAS6).

Your laboratory results indicate that PFAS6 were reported at 12.1 ng/L in the water sample collected on October 14, 2021, which is below the MassDEP MCL of 20 ng/L. Because of this detection, you will continue to receive bottled water from the Town.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, with any questions.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____
2. MCP phase of work during which the sampling will be/has been conducted:
- | | |
|--|---|
| Immediate Response Action | Phase III Feasibility Evaluation |
| Release Abatement Measure | Phase IV Remedy Implementation Plan |
| Utility-related Abatement Measure | Phase V/Remedy Operation Status |
| Phase I Initial Site Investigation | Post-Temporary Solution Operation, Maintenance and Monitoring |
| Phase II Comprehensive Site Assessment | Other _____ |
- (specify)
3. Description of property where sampling will be/has been conducted:
residential commercial industrial school/playground Other _____
(specify)
4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

-

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	40 Boylston Ave				
		4/28/2020	10/1/2020	1/20/2021	4/20/2021	10/14/2021
Well Depth (feet)		UNKNOWN				
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	2.1	ND (2.0)
Perfluorooctanoic acid (PFOA)		5.3	4.6	6	7.5	6.5
Perfluorooctanesulfonic acid (PFOS)		3.9	3.8	4.3	5.3	5.6
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		9.2	8.4	10.3	14.9	12.1
Regulated Total	20	9.2	8.4	10.3	14.9	12.1

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

October 27, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

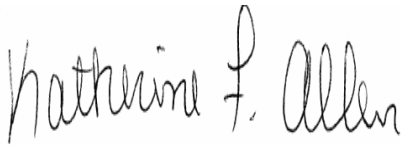
Project Location: 40 Boylston, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1149

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/27/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1149

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 40 Boylston, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
40 Boylston	21J1149-01	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 40 Boylston, Princeton, MA

Sample Description:

Work Order: 21J1149

Date Received: 10/19/2021

Field Sample #: 40 Boylston

Sampled: 10/14/2021 12:00

Sample ID: 21J1149-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date	Date/Time	Analyst
		RL	MA ORSG					Prepared	Analyzed	
Perfluorobutanesulfonic acid (PFBS)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:52	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:52	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:52	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:52	BLH
Perfluorooctanoic acid (PFOA)	6.5	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:52	BLH
Perfluorooctanesulfonic acid (PFOS)	5.6	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:52	BLH
Perfluorononanoic acid (PFNA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:52	BLH
Perfluorodecanoic acid (PFDA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:52	BLH
N-EtFOSAA	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:52	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:52	BLH
N-MeFOSAA	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:52	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:52	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:52	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:52	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:52	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:52	BLH
9Cl-PF3ONS (F53B Major)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:52	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:52	BLH
Surrogates		% Recovery		Recovery Limits		Flag/Qual				
13C-PFHxA		86.2		70-130					10/26/21 12:52	
M3HFPO-DA		82.9		70-130					10/26/21 12:52	
13C-PFDA		85.0		70-130					10/26/21 12:52	
d5-NEtFOSAA		93.2		70-130					10/26/21 12:52	

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1149-01 [40 Boylston]	B292862	272	1.00	10/22/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B292862 - EPA 537.1

Blank (B292862-BLK1)

Prepared: 10/22/21 Analyzed: 10/26/21

Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	43.8		ng/L	37.3		117	70-130			
Surrogate: M3HFPO-DA	43.4		ng/L	37.3		116	70-130			
Surrogate: 13C-PFDA	37.9		ng/L	37.3		102	70-130			
Surrogate: d5-NEtFOSAA	170		ng/L	149		114	70-130			

LCS (B292862-BS1)

Prepared: 10/22/21 Analyzed: 10/26/21

Perfluorobutanesulfonic acid (PFBS)	15.8	1.9	ng/L	16.5		95.7	70-130			
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.6	70-130			
Perfluorohexanesulfonic acid (PFHxS)	17.0	1.9	ng/L	17.0		99.8	70-130			
Perfluoroheptanoic acid (PFHpA)	16.3	1.9	ng/L	18.6		87.6	70-130			
Perfluorooctanoic acid (PFOA)	17.6	1.9	ng/L	18.6		94.7	70-130			
Perfluorooctanesulfonic acid (PFOS)	15.8	1.9	ng/L	17.2		91.4	70-130			
Perfluorononanoic acid (PFNA)	15.4	1.9	ng/L	18.6		83.1	70-130			
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130			
N-EtFOSAA	17.4	1.9	ng/L	18.6		93.6	70-130			
Perfluoroundecanoic acid (PFUnA)	17.8	1.9	ng/L	18.6		95.7	70-130			
N-MeFOSAA	17.3	1.9	ng/L	18.6		93.2	70-130			
Perfluorododecanoic acid (PFDoA)	17.7	1.9	ng/L	18.6		95.2	70-130			
Perfluorotridecanoic acid (PFTTrDA)	17.2	1.9	ng/L	18.6		92.4	70-130			
Perfluorotetradecanoic acid (PFTA)	17.4	1.9	ng/L	18.6		93.8	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.3	1.9	ng/L	18.6		93.1	70-130			
11Cl-PF3OUdS (F53B Minor)	18.0	1.9	ng/L	17.5		103	70-130			
9Cl-PF3ONS (F53B Major)	17.9	1.9	ng/L	17.3		103	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.8	1.9	ng/L	17.6		95.4	70-130			
Surrogate: 13C-PFHxA	41.0		ng/L	37.2		110	70-130			
Surrogate: M3HFPO-DA	40.4		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.9		ng/L	37.2		99.2	70-130			
Surrogate: d5-NEtFOSAA	163		ng/L	149		109	70-130			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292862 - EPA 537.1										
LCS Dup (B292862-BSD1)										
					Prepared: 10/22/21 Analyzed: 10/26/21					
Perfluorobutanesulfonic acid (PFBS)	15.5	1.9	ng/L	16.5		93.8	70-130	1.88	30	
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.7	70-130	0.343	30	
Perfluorohexanesulfonic acid (PFHxS)	17.1	1.9	ng/L	17.0		101	70-130	1.06	30	
Perfluoroheptanoic acid (PFHpA)	16.1	1.9	ng/L	18.6		86.3	70-130	1.32	30	
Perfluorooctanoic acid (PFOA)	17.1	1.9	ng/L	18.6		91.9	70-130	2.72	30	
Perfluorooctanesulfonic acid (PFOS)	15.4	1.9	ng/L	17.3		89.0	70-130	2.44	30	
Perfluorononanoic acid (PFNA)	15.3	1.9	ng/L	18.6		82.0	70-130	1.12	30	
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130	0.149	30	
N-EtFOSAA	17.1	1.9	ng/L	18.6		91.7	70-130	1.81	30	
Perfluoroundecanoic acid (PFUnA)	18.0	1.9	ng/L	18.6		96.5	70-130	1.08	30	
N-MeFOSAA	17.8	1.9	ng/L	18.6		95.6	70-130	2.69	30	
Perfluorododecanoic acid (PFDoA)	17.3	1.9	ng/L	18.6		92.9	70-130	2.31	30	
Perfluorotridecanoic acid (PFTrDA)	17.3	1.9	ng/L	18.6		92.9	70-130	0.701	30	
Perfluorotetradecanoic acid (PFTA)	17.1	1.9	ng/L	18.6		92.0	70-130	1.83	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.1	1.9	ng/L	18.6		91.9	70-130	1.05	30	
11Cl-PF3OUdS (F53B Minor)	17.8	1.9	ng/L	17.6		101	70-130	1.35	30	
9Cl-PF3ONS (F53B Major)	17.6	1.9	ng/L	17.4		101	70-130	2.07	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.7	1.9	ng/L	17.6		95.1	70-130	0.145	30	
Surrogate: 13C-PFHxA	40.7		ng/L	37.2		109	70-130			
Surrogate: M3HFPO-DA	40.5		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.7		ng/L	37.2		98.5	70-130			
Surrogate: d5-NEtFOSAA	166		ng/L	149		111	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BAA Bonita A. Abanulo

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	444	442	1.205187	1.224447		-0.5	30
Perfluorohexanoic acid (PFHxA)	A	500	493	0.7174549	0.7339039		-1.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	467	0.9422487	0.9997435		2.2	30
Perfluoroheptanoic acid (PFHpA)	A	500	429	0.5131844	0.4640475		-14.1	30
Perfluorooctanoic acid (PFOA)	A	500	551	1.018894	1.158365		10.3	30
Perfluorooctanesulfonic acid (PFOS)	A	464	478	0.9862048	1.021105		2.9	30
Perfluorononanoic acid (PFNA)	A	500	412	0.9556153	0.8088272		-17.6	30
Perfluorodecanoic acid (PFDA)	A	500	480	1.019289	1.029208		-4.1	30
N-EtFOSAA	A	500	483	0.7469728	0.748993		-3.4	30
Perfluoroundecanoic acid (PFUnA)	A	500	522	0.9840387	1.060965		4.3	30
N-MeFOSAA	A	500	507	0.9030075	0.9168343		1.3	30
Perfluorododecanoic acid (PFDoA)	A	500	500	1.153654	1.231809		0.07	30
Perfluorotridecanoic acid (PFTrDA)	A	500	453	1.231259	1.166599		-9.4	30
Perfluorotetradecanoic acid (PFTA)	A	500	467	1.033649	1.001868		-6.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	549	1.481833E-02	1.651154E-02		9.8	30
11Cl-PF3OUdS (F53B Minor)	A	472	474	1.641038	1.639428		0.3	30
9Cl-PF3ONS (F53B Major)	A	466	466	3.518141	3.5012		0.09	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	446	1.350704	1.324111		-5.5	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2080	1.205187	1.151823		-6.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2450	0.7174549	0.7276259		-2.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2280	0.9422487	0.9796582		0.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2190	0.5131844	0.4730903		-12.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2540	1.018894	1.065353		1.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2240	0.9862048	0.956855		-3.5	30
Perfluorononanoic acid (PFNA)	A	2500	2280	0.9556153	0.8939886		-8.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2470	1.019289	1.059261		-1.3	30
N-EtFOSAA	A	2500	2540	0.7469728	0.78652		1.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2690	0.9840387	1.094937		7.7	30
N-MeFOSAA	A	2500	2470	0.9030075	0.8958022		-1.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2600	1.153654	1.279111		3.9	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2620	1.231259	1.3494		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2650	1.033649	1.137421		5.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2380	1.481833E-02	1.432532E-02		-4.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.710564		4.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2460	3.518141	3.704886		5.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2350	1.350704	1.396409		-0.4	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21900	1.205187	1.212846		-1.4	30
Perfluorohexanoic acid (PFHxA)	A	25000	25800	0.7174549	0.766353		3.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	0.9992528		2.1	30
Perfluoroheptanoic acid (PFHpA)	A	25000	24100	0.5131844	0.520733		-3.6	30
Perfluorooctanoic acid (PFOA)	A	25000	25600	1.018894	1.07771		2.6	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23500	0.9862048	1.003068		1.1	30
Perfluorononanoic acid (PFNA)	A	25000	23800	0.9556153	0.9362592		-4.6	30
Perfluorodecanoic acid (PFDA)	A	25000	25900	1.019289	1.111468		3.6	30
N-EtFOSAA	A	25000	25700	0.7469728	0.768614		3.0	30
Perfluoroundecanoic acid (PFUnA)	A	25000	26700	0.9840387	1.085744		6.7	30
N-MeFOSAA	A	25000	25400	0.9030075	0.9491052		1.7	30
Perfluorododecanoic acid (PFDoA)	A	25000	26600	1.153654	1.308219		6.3	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26200	1.231259	1.349207		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	26400	1.033649	1.134729		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25400	1.481833E-02	1.529015E-02		1.7	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25100	1.641038	1.825779		6.4	30
9Cl-PF3ONS (F53B Major)	A	23300	25000	3.518141	3.980416		7.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24300	1.350704	1.445925		3.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2090	1.205187	1.159763		-5.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2400	0.7174549	0.7136453		-4.1	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2220	0.9422487	0.9521833		-2.7	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2200	0.5131844	0.4751433		-12.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2490	1.018894	1.046674		-0.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	0.9862048	0.9647938		-2.7	30
Perfluorononanoic acid (PFNA)	A	2500	2290	0.9556153	0.897298		-8.6	30
Perfluorodecanoic acid (PFDA)	A	2500	2500	1.019289	1.072089		-0.1	30
N-EtFOSAA	A	2500	2490	0.7469728	0.7685828		-0.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2700	0.9840387	1.099698		8.1	30
N-MeFOSAA	A	2500	2480	0.9030075	0.8993446		-0.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2610	1.153654	1.285782		4.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2540	1.231259	1.306517		1.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2560	1.033649	1.098145		2.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2340	1.481833E-02	1.407048E-02		-6.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.708613		4.2	30
9Cl-PF3ONS (F53B Major)	A	2330	2520	3.518141	3.798072		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2340	1.350704	1.388313		-1.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
EPA 537.1

S064711-CCV5

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	22000	1.205187	1.219675		-0.9	30
Perfluorohexanoic acid (PFHxA)	A	25000	25700	0.7174549	0.7639828		2.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	1.001704		2.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	23800	0.5131844	0.5144887		-4.8	30
Perfluorooctanoic acid (PFOA)	A	25000	25400	1.018894	1.068279		1.7	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23600	0.9862048	1.009655		1.8	30
Perfluorononanoic acid (PFNA)	A	25000	23700	0.9556153	0.9312701		-5.1	30
Perfluorodecanoic acid (PFDA)	A	25000	26200	1.019289	1.125386		4.9	30
N-EtFOSAA	A	25000	26000	0.7469728	0.7756554		3.9	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27400	0.9840387	1.11475		9.6	30
N-MeFOSAA	A	25000	25900	0.9030075	0.9658908		3.4	30
Perfluorododecanoic acid (PFDoA)	A	25000	27400	1.153654	1.347163		9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26900	1.231259	1.383697		7.4	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27100	1.033649	1.164994		8.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	23700	1.481833E-02	1.427195E-02		-5.1	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25800	1.641038	1.874904		9.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25200	3.518141	4.012609		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24000	1.350704	1.426229		1.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

2151149

Phone: 612-607-6400
Fax: 612-607-6344

https://www.pacelabs.com/

Doc # 381 Rev 4_01/08/2020

Page 1 of 1



Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
Tighe & Bond
Address: 120 Front Street, Worcester, MA 01610
Phone: 508-754-2201
Project Location: Princeton, MA
Project Number: P-0534017
Project Manager: Jeff Aips/Michael Scherer
Pace Analytical Quote Name/Number
Invoice Recipient:
Sampled By: Tighe & Bond
M Scherer

CHAIN OF CUSTODY RECORD

7-Day 10-Day Field Filtered
 PFAS 10-Day (std) Due Date:
 1-Day 3-Day Field Filtered
 2-Day 4-Day Lab to Filter
 Format: PDF EXCEL
 Other:
 CLP Like Data Pkg Required:
 Email To: mjscherer@tighebond.com
 Fax To #:

ANALYSIS REQUESTED

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

Preservation Code
 Courier Use Only
 Total Number Of:
 VIALS
 GLASS
 PLASTIC
 BACTERIA
 ENCORE
 Glassware in the fridge?
 Y / N
 Glassware in freezer? Y / N
 Prepackaged Cooler? Y / N
 *Pace Analytical is not responsible for missing samples from prepacked coolers
 1 Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)
 2 Preservation Codes:
 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

Client Comments: Please report the 14 compound list

Special Requirements
 MA MCP Required
 MCP Certification Form Required
 CT RCP Required
 RCP Certification Form Required
 MA State DW Required
 PMSID #
 Project Entity
 Government Municipality
 Federal City
 City: 21 J
 State: Brownfield
 Other
 Chromatogram
 AIHA-LAP, LLC

Relinquished by: (signature) Date/Time: 10/14/21 1500
 Received by: (signature) Date/Time: 10/15
 Relinquished by: (signature) Date/Time: 10/19/21 1550
 Received by: (signature) Date/Time: 10/19/21 1550
 Relinquished by: (signature) Date/Time: 10/19/21 1550
 Received by: (signature) Date/Time:
 Relinquished by: (signature) Date/Time:
 Received by: (signature) Date/Time:
 Comments:

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T E B

Received By GL Date 10/19/11 Time 1550

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T
Did COC include all pertinent information? Client T Analysis T Sampler Name T
Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T
Are there Lab to Filters? F Who was notified? _____
Are there Rushes? F Who was notified? _____
Are there Short Holds? F Who was notified? _____

Is there enough Volume? T
Is there Headspace where applicable? NA MS/MSD? F
Proper Media/Containers Used? T Is splitting samples required? F
Were trip blanks received? F On COC? F
Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

P-0534
November 30, 2021

Julie O'Connor
44 Gregory Hill Road
Princeton, Massachusetts 01541

Re: **Residential Well Sampling**
44 Gregory Hill Road, Princeton

Dear Ms. O'Connor:

Enclosed is a copy of the laboratory analytical results for the groundwater sample collected from the residential well located at 44 Gregory Hill Road as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the residential well water sample on October 19, 2021, and Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts analyzed the sample for per- and polyfluoroalkyl substances (PFAS). Con Test is a Massachusetts certified environmental laboratory.

Your laboratory results indicate that PFAS was not detected above laboratory reporting limits in the water samples collected on October 19, 2021. A copy of the lab report is attached to this letter.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, with any questions.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

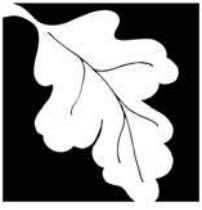
1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____
2. MCP phase of work during which the sampling will be/has been conducted:
- | | |
|--|---|
| Immediate Response Action | Phase III Feasibility Evaluation |
| Release Abatement Measure | Phase IV Remedy Implementation Plan |
| Utility-related Abatement Measure | Phase V/Remedy Operation Status |
| Phase I Initial Site Investigation | Post-Temporary Solution Operation, Maintenance and Monitoring |
| Phase II Comprehensive Site Assessment | Other _____ |
- (specify)
3. Description of property where sampling will be/has been conducted:
- residential commercial industrial school/playground Other _____
- (specify)
4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

	-	
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NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	44 Gregory Hill Rd				
		UNKNOWN				
Well Depth (feet)						
Sampling Date		2/5/2020	7/22/2020	1/20/2021	4/26/2021	10/19/2021
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

October 27, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

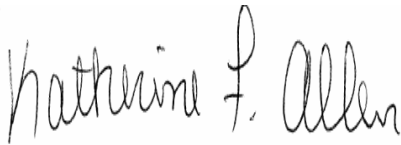
Project Location: 44 Gregory Hall
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1163

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/27/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1163

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 44 Gregory Hall

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
44 Gregory Hall	21J1163-01	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 44 Gregory Hall

Sample Description:

Work Order: 21J1163

Date Received: 10/19/2021

Field Sample #: 44 Gregory Hall

Sampled: 10/19/2021 12:00

Sample ID: 21J1163-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:17	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:17	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:17	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:17	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:17	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:17	BLH
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:17	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:17	BLH
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:17	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:17	BLH
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:17	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:17	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:17	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:17	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:17	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:17	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:17	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:17	BLH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
13C-PFHxA	113	70-130	10/26/21 14:17
M3HFPO-DA	107	70-130	10/26/21 14:17
13C-PFDA	104	70-130	10/26/21 14:17
d5-NEtFOSAA	112	70-130	10/26/21 14:17

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1163-01 [44 Gregory Hall]	B292862	262	1.00	10/22/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292862 - EPA 537.1										
Blank (B292862-BLK1)										
Prepared: 10/22/21 Analyzed: 10/26/21										
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	43.8		ng/L	37.3		117	70-130			
Surrogate: M3HFPO-DA	43.4		ng/L	37.3		116	70-130			
Surrogate: 13C-PFDA	37.9		ng/L	37.3		102	70-130			
Surrogate: d5-NEtFOSAA	170		ng/L	149		114	70-130			
LCS (B292862-BS1)										
Prepared: 10/22/21 Analyzed: 10/26/21										
Perfluorobutanesulfonic acid (PFBS)	15.8	1.9	ng/L	16.5		95.7	70-130			
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.6	70-130			
Perfluorohexanesulfonic acid (PFHxS)	17.0	1.9	ng/L	17.0		99.8	70-130			
Perfluoroheptanoic acid (PFHpA)	16.3	1.9	ng/L	18.6		87.6	70-130			
Perfluorooctanoic acid (PFOA)	17.6	1.9	ng/L	18.6		94.7	70-130			
Perfluorooctanesulfonic acid (PFOS)	15.8	1.9	ng/L	17.2		91.4	70-130			
Perfluorononanoic acid (PFNA)	15.4	1.9	ng/L	18.6		83.1	70-130			
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130			
N-EtFOSAA	17.4	1.9	ng/L	18.6		93.6	70-130			
Perfluoroundecanoic acid (PFUnA)	17.8	1.9	ng/L	18.6		95.7	70-130			
N-MeFOSAA	17.3	1.9	ng/L	18.6		93.2	70-130			
Perfluorododecanoic acid (PFDoA)	17.7	1.9	ng/L	18.6		95.2	70-130			
Perfluorotridecanoic acid (PFTTrDA)	17.2	1.9	ng/L	18.6		92.4	70-130			
Perfluorotetradecanoic acid (PFTA)	17.4	1.9	ng/L	18.6		93.8	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.3	1.9	ng/L	18.6		93.1	70-130			
11Cl-PF3OUdS (F53B Minor)	18.0	1.9	ng/L	17.5		103	70-130			
9Cl-PF3ONS (F53B Major)	17.9	1.9	ng/L	17.3		103	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.8	1.9	ng/L	17.6		95.4	70-130			
Surrogate: 13C-PFHxA	41.0		ng/L	37.2		110	70-130			
Surrogate: M3HFPO-DA	40.4		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.9		ng/L	37.2		99.2	70-130			
Surrogate: d5-NEtFOSAA	163		ng/L	149		109	70-130			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292862 - EPA 537.1										
LCS Dup (B292862-BSD1)										
					Prepared: 10/22/21 Analyzed: 10/26/21					
Perfluorobutanesulfonic acid (PFBS)	15.5	1.9	ng/L	16.5		93.8	70-130	1.88	30	
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.7	70-130	0.343	30	
Perfluorohexanesulfonic acid (PFHxS)	17.1	1.9	ng/L	17.0		101	70-130	1.06	30	
Perfluoroheptanoic acid (PFHpA)	16.1	1.9	ng/L	18.6		86.3	70-130	1.32	30	
Perfluorooctanoic acid (PFOA)	17.1	1.9	ng/L	18.6		91.9	70-130	2.72	30	
Perfluorooctanesulfonic acid (PFOS)	15.4	1.9	ng/L	17.3		89.0	70-130	2.44	30	
Perfluorononanoic acid (PFNA)	15.3	1.9	ng/L	18.6		82.0	70-130	1.12	30	
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130	0.149	30	
N-EtFOSAA	17.1	1.9	ng/L	18.6		91.7	70-130	1.81	30	
Perfluoroundecanoic acid (PFUnA)	18.0	1.9	ng/L	18.6		96.5	70-130	1.08	30	
N-MeFOSAA	17.8	1.9	ng/L	18.6		95.6	70-130	2.69	30	
Perfluorododecanoic acid (PFDoA)	17.3	1.9	ng/L	18.6		92.9	70-130	2.31	30	
Perfluorotridecanoic acid (PFTrDA)	17.3	1.9	ng/L	18.6		92.9	70-130	0.701	30	
Perfluorotetradecanoic acid (PFTA)	17.1	1.9	ng/L	18.6		92.0	70-130	1.83	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.1	1.9	ng/L	18.6		91.9	70-130	1.05	30	
11Cl-PF3OUdS (F53B Minor)	17.8	1.9	ng/L	17.6		101	70-130	1.35	30	
9Cl-PF3ONS (F53B Major)	17.6	1.9	ng/L	17.4		101	70-130	2.07	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.7	1.9	ng/L	17.6		95.1	70-130	0.145	30	
Surrogate: 13C-PFHxA	40.7		ng/L	37.2		109	70-130			
Surrogate: M3HFPO-DA	40.5		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.7		ng/L	37.2		98.5	70-130			
Surrogate: d5-NEtFOSAA	166		ng/L	149		111	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m ³	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BAA Bonita A. Abanulo

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	444	442	1.205187	1.224447		-0.5	30
Perfluorohexanoic acid (PFHxA)	A	500	493	0.7174549	0.7339039		-1.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	467	0.9422487	0.9997435		2.2	30
Perfluoroheptanoic acid (PFHpA)	A	500	429	0.5131844	0.4640475		-14.1	30
Perfluorooctanoic acid (PFOA)	A	500	551	1.018894	1.158365		10.3	30
Perfluorooctanesulfonic acid (PFOS)	A	464	478	0.9862048	1.021105		2.9	30
Perfluorononanoic acid (PFNA)	A	500	412	0.9556153	0.8088272		-17.6	30
Perfluorodecanoic acid (PFDA)	A	500	480	1.019289	1.029208		-4.1	30
N-EtFOSAA	A	500	483	0.7469728	0.748993		-3.4	30
Perfluoroundecanoic acid (PFUnA)	A	500	522	0.9840387	1.060965		4.3	30
N-MeFOSAA	A	500	507	0.9030075	0.9168343		1.3	30
Perfluorododecanoic acid (PFDoA)	A	500	500	1.153654	1.231809		0.07	30
Perfluorotridecanoic acid (PFTrDA)	A	500	453	1.231259	1.166599		-9.4	30
Perfluorotetradecanoic acid (PFTA)	A	500	467	1.033649	1.001868		-6.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	549	1.481833E-02	1.651154E-02		9.8	30
11Cl-PF3OUdS (F53B Minor)	A	472	474	1.641038	1.639428		0.3	30
9Cl-PF3ONS (F53B Major)	A	466	466	3.518141	3.5012		0.09	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	446	1.350704	1.324111		-5.5	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2080	1.205187	1.151823		-6.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2450	0.7174549	0.7276259		-2.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2280	0.9422487	0.9796582		0.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2190	0.5131844	0.4730903		-12.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2540	1.018894	1.065353		1.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2240	0.9862048	0.956855		-3.5	30
Perfluorononanoic acid (PFNA)	A	2500	2280	0.9556153	0.8939886		-8.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2470	1.019289	1.059261		-1.3	30
N-EtFOSAA	A	2500	2540	0.7469728	0.78652		1.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2690	0.9840387	1.094937		7.7	30
N-MeFOSAA	A	2500	2470	0.9030075	0.8958022		-1.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2600	1.153654	1.279111		3.9	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2620	1.231259	1.3494		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2650	1.033649	1.137421		5.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2380	1.481833E-02	1.432532E-02		-4.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.710564		4.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2460	3.518141	3.704886		5.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2350	1.350704	1.396409		-0.4	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21900	1.205187	1.212846		-1.4	30
Perfluorohexanoic acid (PFHxA)	A	25000	25800	0.7174549	0.766353		3.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	0.9992528		2.1	30
Perfluoroheptanoic acid (PFHpA)	A	25000	24100	0.5131844	0.520733		-3.6	30
Perfluorooctanoic acid (PFOA)	A	25000	25600	1.018894	1.07771		2.6	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23500	0.9862048	1.003068		1.1	30
Perfluorononanoic acid (PFNA)	A	25000	23800	0.9556153	0.9362592		-4.6	30
Perfluorodecanoic acid (PFDA)	A	25000	25900	1.019289	1.111468		3.6	30
N-EtFOSAA	A	25000	25700	0.7469728	0.768614		3.0	30
Perfluoroundecanoic acid (PFUnA)	A	25000	26700	0.9840387	1.085744		6.7	30
N-MeFOSAA	A	25000	25400	0.9030075	0.9491052		1.7	30
Perfluorododecanoic acid (PFDoA)	A	25000	26600	1.153654	1.308219		6.3	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26200	1.231259	1.349207		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	26400	1.033649	1.134729		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25400	1.481833E-02	1.529015E-02		1.7	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25100	1.641038	1.825779		6.4	30
9Cl-PF3ONS (F53B Major)	A	23300	25000	3.518141	3.980416		7.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24300	1.350704	1.445925		3.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2090	1.205187	1.159763		-5.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2400	0.7174549	0.7136453		-4.1	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2220	0.9422487	0.9521833		-2.7	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2200	0.5131844	0.4751433		-12.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2490	1.018894	1.046674		-0.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	0.9862048	0.9647938		-2.7	30
Perfluorononanoic acid (PFNA)	A	2500	2290	0.9556153	0.897298		-8.6	30
Perfluorodecanoic acid (PFDA)	A	2500	2500	1.019289	1.072089		-0.1	30
N-EtFOSAA	A	2500	2490	0.7469728	0.7685828		-0.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2700	0.9840387	1.099698		8.1	30
N-MeFOSAA	A	2500	2480	0.9030075	0.8993446		-0.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2610	1.153654	1.285782		4.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2540	1.231259	1.306517		1.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2560	1.033649	1.098145		2.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2340	1.481833E-02	1.407048E-02		-6.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.708613		4.2	30
9Cl-PF3ONS (F53B Major)	A	2330	2520	3.518141	3.798072		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2340	1.350704	1.388313		-1.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV5

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	22000	1.205187	1.219675		-0.9	30
Perfluorohexanoic acid (PFHxA)	A	25000	25700	0.7174549	0.7639828		2.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	1.001704		2.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	23800	0.5131844	0.5144887		-4.8	30
Perfluorooctanoic acid (PFOA)	A	25000	25400	1.018894	1.068279		1.7	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23600	0.9862048	1.009655		1.8	30
Perfluorononanoic acid (PFNA)	A	25000	23700	0.9556153	0.9312701		-5.1	30
Perfluorodecanoic acid (PFDA)	A	25000	26200	1.019289	1.125386		4.9	30
N-EtFOSAA	A	25000	26000	0.7469728	0.7756554		3.9	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27400	0.9840387	1.11475		9.6	30
N-MeFOSAA	A	25000	25900	0.9030075	0.9658908		3.4	30
Perfluorododecanoic acid (PFDoA)	A	25000	27400	1.153654	1.347163		9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26900	1.231259	1.383697		7.4	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27100	1.033649	1.164994		8.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	23700	1.481833E-02	1.427195E-02		-5.1	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25800	1.641038	1.874904		9.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25200	3.518141	4.012609		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24000	1.350704	1.426229		1.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

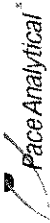
Phone: 612-607-6400
Fax: 612-607-6344

<https://www.pacelabs.com/>

Doc # 381 Rev 4_01/08/2020
Page 1 of 1

1800 Elm Street SE
Minneapolis, MN 55414

CHAIN OF CUSTODY RECORD



Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>

Tighe & Bond

120 Front Street, Worcester, MA 01610

Phone: 508-754-2201

Princeton Private Well Sampling

Princeton, MA

Project Number: P-0534017

Project Manager: Jeff Aps/Michael Scherer

Pace Analytical Quote Name/Number

Invoice Recipient: Tighe & Bond

Sampled By: M Scherer

ANALYSIS REQUESTED

7-Day PFAS 10-Day (std) 10-Day Due Date:
 1-Day 3-Day Field Filtered Lab to Filter
 2-Day 4-Day Field Filtered Lab to Filter

Format: PDF EXCEL **PCB ONLY**

Other: SOXHLET

CLP Like Data Pkg Required:

Email To: mischerer@tighebond.com

Fax To #: NON SOXHLET

Beginning Date/Time	Client Sample ID / Description	Ending Date/Time	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
10/19/21	44 Gregory Hill	12:00	DW	U	2				

Client Comments: Please report the 14 compound list

Relinquished by: (signature)	Date/Time:	Received by: (signature)	Date/Time:	Relinquished by: (signature)	Date/Time:	Received by: (signature)	Date/Time:
<i>[Signature]</i>	10/19/21 1500	<i>[Signature]</i>	10/19	<i>[Signature]</i>	10/19/21	<i>[Signature]</i>	10/19/21 1550
<i>[Signature]</i>		<i>[Signature]</i>	10/19	<i>[Signature]</i>	20/10/19/21	<i>[Signature]</i>	
<i>[Signature]</i>		<i>[Signature]</i>		<i>[Signature]</i>		<i>[Signature]</i>	

Special Requirements: MA MCP Required MA State DW Required
 ACP Certification Form Required CT RCP Required
 RCP Certification Form Required

Project Entity: Government Municipality WRTA Other
 Federal 21 J School Chromatogram
 City Brownfield MBTA AIHA-LAP, LLC

Preservation Codes:	
1 = Iced	H = HCL
M = Methanol	N = Nitric Acid
S = Sulfuric Acid	B = Sodium Bisulfate
X = Sodium Hydroxide	T = Sodium Thioisulfate
O = Other (please define)	

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T E B
 Received By ML Date 10/19/11 Time 1550
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

P-0534
November 24, 2021

Christian and Laura Gal
44 Hubbardston Road
Princeton, Massachusetts 01541

Re: **Residential Well Sampling**
44 Hubbardston Road, Princeton

Dear Mr. and Mrs. Gal:

Enclosed is a copy of the laboratory analytical results for the water sample collected from the residential well located at 44 Hubbardston Road as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the residential well water sample on October 18, 2021, and Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts analyzed the sample for per- and polyfluoroalkyl substances (PFAS). Con Test is a Massachusetts certified environmental laboratory.

A copy of the lab report is attached to this letter. Analytical results have been compared to MassDEP's proposed drinking water Maximum Contaminant Level (MCL) and GW-1 groundwater standard of 20 nanograms per liter (ng/L), or parts per trillion (ppt), for the combined total of six specific PFAS compounds (PFAS6).

Your laboratory results indicate that the total regulated PFAS concentration was reported at 19.4 ng/L in the water samples collected on October 18, 2021, which is below the MassDEP proposed MCL of 20 ng/L. Because of this detection, you are receiving bottled water from the Town.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, with any questions.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____
2. MCP phase of work during which the sampling will be/has been conducted:
- | | |
|--|---|
| Immediate Response Action | Phase III Feasibility Evaluation |
| Release Abatement Measure | Phase IV Remedy Implementation Plan |
| Utility-related Abatement Measure | Phase V/Remedy Operation Status |
| Phase I Initial Site Investigation | Post-Temporary Solution Operation, Maintenance and Monitoring |
| Phase II Comprehensive Site Assessment | Other _____ |
- (specify)
3. Description of property where sampling will be/has been conducted:
- residential commercial industrial school/playground Other _____
- (specify)
4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

	-	
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NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	44 Hubbardston Rd				
		UNKNOWN				
Well Depth (feet)		2/10/2020	7/23/2020	1/19/2021	4/26/2021	10/18/2021
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (4.0)	2.2	ND (2.0)	ND (2.0)	1.8
Perfluorohexanesulfonic acid (PFHxS)		ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (4.0)	2.1	ND (2.0)	ND (2.0)	2.4
Perfluorooctanoic acid (PFOA)		ND (4.0)	7.1	3.3	2.8	9.1
Perfluorooctanesulfonic acid (PFOS)		ND (4.0)	5.6	3.3	2.7	7.9
Perfluorononanoic acid (PFNA)		ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (4.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (4.0)	17	6.6	5.5	21.2
Regulated Total	20	ND (4.0)	14.8	6.6	5.5	19.4

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

October 25, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

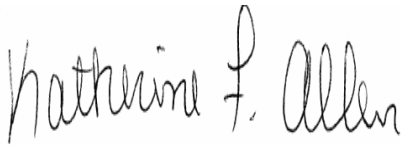
Project Location: 44 Hubbardston, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1140

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/25/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1140

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 44 Hubbardston, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
44 Hubbardston	21J1140-01	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 44 Hubbardston, Princeton, MA

Sample Description:

Work Order: 21J1140

Date Received: 10/19/2021

Field Sample #: 44 Hubbardston

Sampled: 10/18/2021 12:00

Sample ID: 21J1140-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:30	JFC
Perfluorohexanoic acid (PFHxA)	1.8	1.8		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:30	JFC
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:30	JFC
Perfluoroheptanoic acid (PFHpA)	2.4	1.8		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:30	JFC
Perfluorooctanoic acid (PFOA)	9.1	1.8		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:30	JFC
Perfluorooctanesulfonic acid (PFOS)	7.9	1.8		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:30	JFC
Perfluorononanoic acid (PFNA)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:30	JFC
Perfluorodecanoic acid (PFDA)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:30	JFC
N-EtFOSAA	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:30	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:30	JFC
N-MeFOSAA	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:30	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:30	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:30	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:30	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:30	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:30	JFC
9Cl-PF3ONS (F53B Major)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:30	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8		ng/L	1		EPA 537.1	10/20/21	10/22/21 12:30	JFC
Surrogates		% Recovery		Recovery Limits		Flag/Qual				
13C-PFHxA		74.4		70-130					10/22/21 12:30	
M3HFPO-DA		70.3		70-130					10/22/21 12:30	
13C-PFDA		82.4		70-130					10/22/21 12:30	
d5-NEtFOSAA		88.7		70-130					10/22/21 12:30	

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1140-01 [44 Hubbardston]	B292840	277	1.00	10/20/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292840 - EPA 537.1										
Blank (B292840-BLK1)										
Prepared: 10/20/21 Analyzed: 10/21/21										
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	36.4		ng/L	38.8		93.9	70-130			
Surrogate: M3HFPO-DA	37.1		ng/L	38.8		95.5	70-130			
Surrogate: 13C-PFDA	36.5		ng/L	38.8		94.0	70-130			
Surrogate: d5-NEtFOSAA	140		ng/L	155		90.1	70-130			
LCS (B292840-BS1)										
Prepared: 10/20/21 Analyzed: 10/21/21										
Perfluorobutanesulfonic acid (PFBS)	7.49	1.9	ng/L	8.53		87.7	70-130			
Perfluorohexanoic acid (PFHxA)	8.83	1.9	ng/L	9.62		91.8	70-130			
Perfluorohexanesulfonic acid (PFHxS)	8.40	1.9	ng/L	8.79		95.6	70-130			
Perfluoroheptanoic acid (PFHpA)	8.53	1.9	ng/L	9.62		88.7	70-130			
Perfluorooctanoic acid (PFOA)	8.74	1.9	ng/L	9.62		90.9	70-130			
Perfluorooctanesulfonic acid (PFOS)	8.36	1.9	ng/L	8.93		93.6	70-130			
Perfluorononanoic acid (PFNA)	8.50	1.9	ng/L	9.62		88.3	70-130			
Perfluorodecanoic acid (PFDA)	9.36	1.9	ng/L	9.62		97.3	70-130			
N-EtFOSAA	8.02	1.9	ng/L	9.62		83.4	70-130			
Perfluoroundecanoic acid (PFUnA)	9.18	1.9	ng/L	9.62		95.5	70-130			
N-MeFOSAA	7.98	1.9	ng/L	9.62		83.0	70-130			
Perfluorododecanoic acid (PFDoA)	8.78	1.9	ng/L	9.62		91.3	70-130			
Perfluorotridecanoic acid (PFTTrDA)	8.24	1.9	ng/L	9.62		85.6	70-130			
Perfluorotetradecanoic acid (PFTA)	7.81	1.9	ng/L	9.62		81.2	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	8.51	1.9	ng/L	9.62		88.5	70-130			
11Cl-PF3OUdS (F53B Minor)	7.76	1.9	ng/L	9.07		85.6	70-130			
9Cl-PF3ONS (F53B Major)	7.85	1.9	ng/L	8.98		87.5	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	8.22	1.9	ng/L	9.09		90.4	70-130			
Surrogate: 13C-PFHxA	37.6		ng/L	38.5		97.8	70-130			
Surrogate: M3HFPO-DA	38.3		ng/L	38.5		99.7	70-130			
Surrogate: 13C-PFDA	38.2		ng/L	38.5		99.2	70-130			
Surrogate: d5-NEtFOSAA	147		ng/L	154		95.7	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JFC James F. Constantino
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BB2 Bethany M Bisnett

CONTINUING CALIBRATION CHECK

EPA 537.1

S064564-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	444	447	1.135859	1.166913		0.6	30
Perfluorohexanoic acid (PFHxA)	A	500	475	0.7557946	0.7473868		-4.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	430	0.9172992	0.87481		-5.9	30
Perfluoroheptanoic acid (PFHpA)	A	500	459	0.5186879	0.5126173		-8.2	30
Perfluorooctanoic acid (PFOA)	A	500	521	1.014466	1.054571		4.2	30
Perfluorooctanesulfonic acid (PFOS)	A	464	469	0.9546162	0.9821549		1.0	30
Perfluorononanoic acid (PFNA)	A	500	511	0.8583182	0.917936		2.2	30
Perfluorodecanoic acid (PFDA)	A	500	463	0.9883469	0.9436683		-7.3	30
N-EtFOSAA	A	500	474	0.8211978	0.8642344		-5.2	30
Perfluoroundecanoic acid (PFUnA)	A	500	526	1.00186	1.067819		5.3	30
N-MeFOSAA	A	500	477	0.9767918	1.018317		-4.6	30
Perfluorododecanoic acid (PFDoA)	A	500	431	1.175679	1.062875		-13.7	30
Perfluorotridecanoic acid (PFTrDA)	A	500	437	1.152766	1.075012		-12.7	30
Perfluorotetradecanoic acid (PFTA)	A	500	426	0.9718999	0.9007773		-14.8	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	602	1.628033E-02	2.022191E-02		20.5	30
11Cl-PF3OUdS (F53B Minor)	A	472	414	1.429084	1.383516		-12.3	30
9Cl-PF3ONS (F53B Major)	A	466	405	2.949299	2.850826		-13.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	431	1.373201	1.314253		-8.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064564-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2020	1.135859	1.057043		-8.9	30
Perfluorohexanoic acid (PFHxA)	A	2500	2290	0.7557946	0.7209404		-8.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2160	0.9172992	0.8818705		-5.2	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2210	0.5186879	0.4939743		-11.5	30
Perfluorooctanoic acid (PFOA)	A	2500	2540	1.014466	1.027227		1.5	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2270	0.9546162	0.9498457		-2.3	30
Perfluorononanoic acid (PFNA)	A	2500	2360	0.8583182	0.8460188		-5.8	30
Perfluorodecanoic acid (PFDA)	A	2500	2520	0.9883469	1.025504		0.7	30
N-EtFOSAA	A	2500	2370	0.8211978	0.8611559		-5.1	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2580	1.00186	1.049016		3.4	30
N-MeFOSAA	A	2500	2280	0.9767918	0.9710313		-8.8	30
Perfluorododecanoic acid (PFDoA)	A	2500	2440	1.175679	1.199709		-2.6	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2440	1.152766	1.199325		-2.6	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2390	0.9718999	1.010036		-4.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2210	1.628033E-02	0.0148711		-11.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2170	1.429084	1.449166		-8.0	30
9Cl-PF3ONS (F53B Major)	A	2330	2180	2.949299	3.056203		-6.5	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2240	1.373201	1.36719		-5.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2250	1.135859	1.175661		1.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2270	0.7557946	0.7128042		-9.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2210	0.9172992	0.9026665		-2.9	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2160	0.5186879	0.4819864		-13.7	30
Perfluorooctanoic acid (PFOA)	A	2500	2650	1.014466	1.07518		6.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2450	0.9546162	1.024945		5.4	30
Perfluorononanoic acid (PFNA)	A	2500	2550	0.8583182	0.9147195		1.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2710	0.9883469	1.105104		8.5	30
N-EtFOSAA	A	2500	2530	0.8211978	0.9177848		1.2	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2800	1.00186	1.134988		11.9	30
N-MeFOSAA	A	2500	2460	0.9767918	1.045588		-1.8	30
Perfluorododecanoic acid (PFDoA)	A	2500	2650	1.175679	1.305484		6.0	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2720	1.152766	1.336643		8.6	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2640	0.9718999	1.117673		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2420	1.628033E-02	1.622857E-02		-3.3	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2370	1.429084	1.580493		0.4	30
9Cl-PF3ONS (F53B Major)	A	2330	2380	2.949299	3.33391		2.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2240	1.373201	1.369497		-5.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	23000	1.135859	1.204066		3.8	30
Perfluorohexanoic acid (PFHxA)	A	25000	26700	0.7557946	0.8400239		6.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	24500	0.9172992	0.9985564		7.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	26100	0.5186879	0.5836485		4.5	30
Perfluorooctanoic acid (PFOA)	A	25000	26800	1.014466	1.086907		7.4	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	24700	0.9546162	1.034115		6.4	30
Perfluorononanoic acid (PFNA)	A	25000	26700	0.8583182	0.958436		6.8	30
Perfluorodecanoic acid (PFDA)	A	25000	28400	0.9883469	1.157711		13.7	30
N-EtFOSAA	A	25000	26200	0.8211978	0.8869809		4.8	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27700	1.00186	1.125429		10.9	30
N-MeFOSAA	A	25000	26500	0.9767918	1.0947		6.1	30
Perfluorododecanoic acid (PFDoA)	A	25000	27800	1.175679	1.371556		11.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	28400	1.152766	1.396505		13.5	30
Perfluorotetradecanoic acid (PFTA)	A	25000	28000	0.9718999	1.184497		12.0	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25700	1.628033E-02	1.727919E-02		2.9	30
11Cl-PF3OUdS (F53B Minor)	A	23600	27200	1.429084	1.756578		15.1	30
9Cl-PF3ONS (F53B Major)	A	23300	26100	2.949299	3.549062		12.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	25000	1.373201	1.528624		6.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2240	1.135859	1.169424		0.8	30
Perfluorohexanoic acid (PFHxA)	A	2500	2580	0.7557946	0.8109661		3.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2350	0.9172992	0.9588437		3.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2450	0.5186879	0.5468278		-2.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2630	1.014466	1.06544		5.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2370	0.9546162	0.992586		2.1	30
Perfluorononanoic acid (PFNA)	A	2500	2530	0.8583182	0.9099244		1.4	30
Perfluorodecanoic acid (PFDA)	A	2500	2820	0.9883469	1.147251		12.7	30
N-EtFOSAA	A	2500	2470	0.8211978	0.8944513		-1.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2840	1.00186	1.15277		13.6	30
N-MeFOSAA	A	2500	2430	0.9767918	1.036022		-2.7	30
Perfluorododecanoic acid (PFDoA)	A	2500	2670	1.175679	1.314604		6.7	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2720	1.152766	1.339952		8.9	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2720	0.9718999	1.152383		9.0	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2470	1.628033E-02	0.0166028		-1.1	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2400	1.429084	1.601682		1.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2340	2.949299	3.284328		0.5	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2450	1.373201	1.49829		4.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21600	1.135859	1.127881		-2.8	30
Perfluorohexanoic acid (PFHxA)	A	25000	26800	0.7557946	0.843118		7.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	24000	0.9172992	0.978684		5.2	30
Perfluoroheptanoic acid (PFHpA)	A	25000	26500	0.5186879	0.5925618		6.1	30
Perfluorooctanoic acid (PFOA)	A	25000	27000	1.014466	1.091847		7.8	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	24200	0.9546162	1.015027		4.4	30
Perfluorononanoic acid (PFNA)	A	25000	26900	0.8583182	0.9668927		7.7	30
Perfluorodecanoic acid (PFDA)	A	25000	28300	0.9883469	1.151287		13.1	30
N-EtFOSAA	A	25000	26300	0.8211978	0.8902964		5.2	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27800	1.00186	1.127115		11.1	30
N-MeFOSAA	A	25000	26300	0.9767918	1.083849		5.0	30
Perfluorododecanoic acid (PFDoA)	A	25000	27700	1.175679	1.364352		10.8	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	28200	1.152766	1.387405		12.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27700	0.9718999	1.172784		10.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25800	1.628033E-02	1.735632E-02		3.4	30
11Cl-PF3OUdS (F53B Minor)	A	23600	26000	1.429084	1.683193		10.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25500	2.949299	3.47103		9.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	25200	1.373201	1.537678		6.7	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

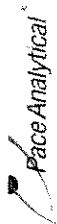
Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

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<https://www.pacelabs.com/>

Doc # 381 Rev 4_01/08/2020

1800 Elm Street SE
Minneapolis, MN 55414

Page 1 of 1

CHAIN OF CUSTODY RECORD

7-Day 10-Day Field Filtered
PFAS 10-Day (std) Due Date: Lab to Filter

1-Day 3-Day Field Filtered
2-Day 4-Day Lab to Filter

Format: PDF EXCEL
Other: SOXHLET

CLP Like Data Pkg Required:
Email To: mischer@fighrebond.com
Fax To #:

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
Tighe & Bond
120 Front Street, Worcester, MA 01610
Phone: 508 754-2201
Project Location: Princeton Private Well Sampling
Princeton, MA
Project Number: P-0534017
Project Manager: Jeff Arps/Michael Scherer
Invoice Recipient: Tighe & Bond
Sampled By: M Scherer

Pace Analytical Work Order #	Client Sample ID / Description	Beginning Date / Time	Ending Date / Time	COMP / GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
44	Hogwashes rd	10/19/21	1200	GRAB	DW	U	2				

Client Comments: Please report the 14 compound list

Relinquished by: (signature) *Arndt Scherer* Date/Time: 10/19/21 1500
Received by: (signature) *Jeff Arps* Date/Time: 10/19/21 1015
Relinquished by: (signature) *Jeff Arps* Date/Time: 10/19/21 1550
Received by: (signature) *Jeff Arps* Date/Time: 10/19/21 1550

Project Entity: Government Municipality MWRA WRTA Other
Federal 21 J School MBTA
City Brownfield MBTA

Comments:

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

ANALYSIS REQUESTED

2	Preservation Code	Counter Use Only	Total Number Of:	
	VIALS	GLASS	PLASTIC	
	BACTERIA	ENCORE		
	Glassware in the fridge?	Y / N		
	Glassware in freezer?	Y / N		
	Prepackaged Cooler?	Y / N		
	*Pace Analytical is not responsible for missing samples from prepacked coolers			
	1 Matrix Codes:			
	GW = Ground Water			
	WW = Waste Water			
	DW = Drinking Water			
	A = Air			
	S = Soil			
	SL = Sludge			
	SOL = Solid			
	O = Other (please define)			
	2 Preservation Codes:			
	I = Iced			
	H = HCL			
	M = Methanol			
	N = Nitric Acid			
	S = Sulfuric Acid			
	B = Sodium Bisulfate			
	X = Sodium Hydroxide			
	T = Sodium Thiosulfate			
	O = Other (please define)			

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T E B

Received By ML Date 10/19/21 Time 1550

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____

Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

P-0534
November 30, 2021

Peter Hart
57 Merriam Road
Princeton, Massachusetts 01541

Re: **Residential Well Sampling
57 Merriam Road, Princeton**

Dear Mr. Hart

Enclosed is a copy of the laboratory analytical results for the water sample collected from the residential well located at 57 Merriam Road as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the residential well water sample on October 18, 2021, and Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts analyzed the sample for per- and polyfluoroalkyl substances (PFAS). Con Test is a Massachusetts-certified environmental laboratory.

A copy of the lab report is attached to this letter. Analytical results have been compared to MassDEP's drinking water Maximum Contaminant Level (MCL) and GW-1 groundwater standard of 20 nanograms per liter (ng/L), or parts per trillion (ppt), for the sum of six specific PFAS compounds (PFAS6).

Your laboratory results indicate that the PFAS6 concentration was reported at 14.0 ppt in the water sample collected on October 18, 2021, which is below the MassDEP MCL of 20 ppt. Because of this detection, you will continue to receive bottled water from the Town.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, with any questions.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup





Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

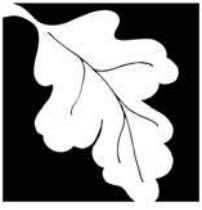
1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____
2. MCP phase of work during which the sampling will be/has been conducted:
- | | |
|--|---|
| Immediate Response Action | Phase III Feasibility Evaluation |
| Release Abatement Measure | Phase IV Remedy Implementation Plan |
| Utility-related Abatement Measure | Phase V/Remedy Operation Status |
| Phase I Initial Site Investigation | Post-Temporary Solution Operation, Maintenance and Monitoring |
| Phase II Comprehensive Site Assessment | Other _____ |
- (specify)
3. Description of property where sampling will be/has been conducted:
residential commercial industrial school/playground Other _____
(specify)
4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

-

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
 PFAS Drinking Water Summary
 Princeton, Massachusetts
 RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	57 Merriam Road									
		UNKNOWN									
		4/28/2020	4/28/2020	10/1/2020		1/21/2021		2/24/2021		4/26/2021	10/18/2021
Well Depth (feet)											
Sampling Date			EFF	INF	EFF	INF	EFF	INF	EFF	INF	INF
EPA 537.1 (ng/l)											
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	-	2.3	-	3.4*	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		2.5	ND (2.0)	ND (2.0)	-	6.7	-	5.1	ND (2.0)	4.6	5.5
Perfluorooctanesulfonic acid (PFOS)		4.3	ND (2.0)	ND (2.0)	-	8.7	-	7.2	ND (2.0)	6.6	8.5
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		6.8	ND (2.0)	ND (2.0)	-	17.7	-	12.3	ND (2.0)	11.2	14.0
Regulated Total	20	6.8	ND (2.0)	ND (2.0)	-	17.7	-	12.3	ND (2.0)	11.2	14.0

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

* PFHpA also detected in both the field blank and trip blank, therefore the reported result is considered invalid. Confirmed as laboratory contaminate. Result is not included in total. Reference lab reports 21B0096_2 and 21B0997_2

October 27, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

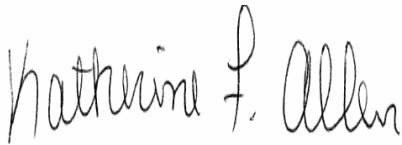
Project Location: 57 Merriam, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1162

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/27/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1162

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 57 Merriam, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
57 Merriam	21J1162-01	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative

Project Location: 57 Merriam, Princeton, MA

Sample Description:

Work Order: 21J1162

Date Received: 10/19/2021

Field Sample #: 57 Merriam

Sampled: 10/18/2021 12:00

Sample ID: 21J1162-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:10	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:10	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:10	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:10	BLH
Perfluorooctanoic acid (PFOA)	5.5	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:10	BLH
Perfluorooctanesulfonic acid (PFOS)	8.5	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:10	BLH
Perfluorononanoic acid (PFNA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:10	BLH
Perfluorodecanoic acid (PFDA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:10	BLH
N-EtFOSAA	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:10	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:10	BLH
N-MeFOSAA	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:10	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:10	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:10	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:10	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:10	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:10	BLH
9Cl-PF3ONS (F53B Major)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:10	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 14:10	BLH
Surrogates		% Recovery		Recovery Limits		Flag/Qual				
13C-PFHxA		102		70-130					10/26/21 14:10	
M3HFPO-DA		97.1		70-130					10/26/21 14:10	
13C-PFDA		103		70-130					10/26/21 14:10	
d5-NEtFOSAA		109		70-130					10/26/21 14:10	

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1162-01 [57 Merriam]	B292862	273	1.00	10/22/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292862 - EPA 537.1										
Blank (B292862-BLK1)										
Prepared: 10/22/21 Analyzed: 10/26/21										
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	43.8		ng/L	37.3		117	70-130			
Surrogate: M3HFPO-DA	43.4		ng/L	37.3		116	70-130			
Surrogate: 13C-PFDA	37.9		ng/L	37.3		102	70-130			
Surrogate: d5-NEtFOSAA	170		ng/L	149		114	70-130			
LCS (B292862-BS1)										
Prepared: 10/22/21 Analyzed: 10/26/21										
Perfluorobutanesulfonic acid (PFBS)	15.8	1.9	ng/L	16.5		95.7	70-130			
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.6	70-130			
Perfluorohexanesulfonic acid (PFHxS)	17.0	1.9	ng/L	17.0		99.8	70-130			
Perfluoroheptanoic acid (PFHpA)	16.3	1.9	ng/L	18.6		87.6	70-130			
Perfluorooctanoic acid (PFOA)	17.6	1.9	ng/L	18.6		94.7	70-130			
Perfluorooctanesulfonic acid (PFOS)	15.8	1.9	ng/L	17.2		91.4	70-130			
Perfluorononanoic acid (PFNA)	15.4	1.9	ng/L	18.6		83.1	70-130			
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130			
N-EtFOSAA	17.4	1.9	ng/L	18.6		93.6	70-130			
Perfluoroundecanoic acid (PFUnA)	17.8	1.9	ng/L	18.6		95.7	70-130			
N-MeFOSAA	17.3	1.9	ng/L	18.6		93.2	70-130			
Perfluorododecanoic acid (PFDoA)	17.7	1.9	ng/L	18.6		95.2	70-130			
Perfluorotridecanoic acid (PFTTrDA)	17.2	1.9	ng/L	18.6		92.4	70-130			
Perfluorotetradecanoic acid (PFTA)	17.4	1.9	ng/L	18.6		93.8	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.3	1.9	ng/L	18.6		93.1	70-130			
11Cl-PF3OUdS (F53B Minor)	18.0	1.9	ng/L	17.5		103	70-130			
9Cl-PF3ONS (F53B Major)	17.9	1.9	ng/L	17.3		103	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.8	1.9	ng/L	17.6		95.4	70-130			
Surrogate: 13C-PFHxA	41.0		ng/L	37.2		110	70-130			
Surrogate: M3HFPO-DA	40.4		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.9		ng/L	37.2		99.2	70-130			
Surrogate: d5-NEtFOSAA	163		ng/L	149		109	70-130			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292862 - EPA 537.1										
LCS Dup (B292862-BSD1)										
					Prepared: 10/22/21 Analyzed: 10/26/21					
Perfluorobutanesulfonic acid (PFBS)	15.5	1.9	ng/L	16.5		93.8	70-130	1.88	30	
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.7	70-130	0.343	30	
Perfluorohexanesulfonic acid (PFHxS)	17.1	1.9	ng/L	17.0		101	70-130	1.06	30	
Perfluoroheptanoic acid (PFHpA)	16.1	1.9	ng/L	18.6		86.3	70-130	1.32	30	
Perfluorooctanoic acid (PFOA)	17.1	1.9	ng/L	18.6		91.9	70-130	2.72	30	
Perfluorooctanesulfonic acid (PFOS)	15.4	1.9	ng/L	17.3		89.0	70-130	2.44	30	
Perfluorononanoic acid (PFNA)	15.3	1.9	ng/L	18.6		82.0	70-130	1.12	30	
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130	0.149	30	
N-EtFOSAA	17.1	1.9	ng/L	18.6		91.7	70-130	1.81	30	
Perfluoroundecanoic acid (PFUnA)	18.0	1.9	ng/L	18.6		96.5	70-130	1.08	30	
N-MeFOSAA	17.8	1.9	ng/L	18.6		95.6	70-130	2.69	30	
Perfluorododecanoic acid (PFDoA)	17.3	1.9	ng/L	18.6		92.9	70-130	2.31	30	
Perfluorotridecanoic acid (PFTrDA)	17.3	1.9	ng/L	18.6		92.9	70-130	0.701	30	
Perfluorotetradecanoic acid (PFTA)	17.1	1.9	ng/L	18.6		92.0	70-130	1.83	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.1	1.9	ng/L	18.6		91.9	70-130	1.05	30	
11Cl-PF3OUdS (F53B Minor)	17.8	1.9	ng/L	17.6		101	70-130	1.35	30	
9Cl-PF3ONS (F53B Major)	17.6	1.9	ng/L	17.4		101	70-130	2.07	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.7	1.9	ng/L	17.6		95.1	70-130	0.145	30	
Surrogate: 13C-PFHxA	40.7		ng/L	37.2		109	70-130			
Surrogate: M3HFPO-DA	40.5		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.7		ng/L	37.2		98.5	70-130			
Surrogate: d5-NEtFOSAA	166		ng/L	149		111	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BAA Bonita A. Abanulo

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	444	442	1.205187	1.224447		-0.5	30
Perfluorohexanoic acid (PFHxA)	A	500	493	0.7174549	0.7339039		-1.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	467	0.9422487	0.9997435		2.2	30
Perfluoroheptanoic acid (PFHpA)	A	500	429	0.5131844	0.4640475		-14.1	30
Perfluorooctanoic acid (PFOA)	A	500	551	1.018894	1.158365		10.3	30
Perfluorooctanesulfonic acid (PFOS)	A	464	478	0.9862048	1.021105		2.9	30
Perfluorononanoic acid (PFNA)	A	500	412	0.9556153	0.8088272		-17.6	30
Perfluorodecanoic acid (PFDA)	A	500	480	1.019289	1.029208		-4.1	30
N-EtFOSAA	A	500	483	0.7469728	0.748993		-3.4	30
Perfluoroundecanoic acid (PFUnA)	A	500	522	0.9840387	1.060965		4.3	30
N-MeFOSAA	A	500	507	0.9030075	0.9168343		1.3	30
Perfluorododecanoic acid (PFDoA)	A	500	500	1.153654	1.231809		0.07	30
Perfluorotridecanoic acid (PFTrDA)	A	500	453	1.231259	1.166599		-9.4	30
Perfluorotetradecanoic acid (PFTA)	A	500	467	1.033649	1.001868		-6.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	549	1.481833E-02	1.651154E-02		9.8	30
11Cl-PF3OUdS (F53B Minor)	A	472	474	1.641038	1.639428		0.3	30
9Cl-PF3ONS (F53B Major)	A	466	466	3.518141	3.5012		0.09	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	446	1.350704	1.324111		-5.5	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2080	1.205187	1.151823		-6.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2450	0.7174549	0.7276259		-2.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2280	0.9422487	0.9796582		0.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2190	0.5131844	0.4730903		-12.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2540	1.018894	1.065353		1.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2240	0.9862048	0.956855		-3.5	30
Perfluorononanoic acid (PFNA)	A	2500	2280	0.9556153	0.8939886		-8.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2470	1.019289	1.059261		-1.3	30
N-EtFOSAA	A	2500	2540	0.7469728	0.78652		1.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2690	0.9840387	1.094937		7.7	30
N-MeFOSAA	A	2500	2470	0.9030075	0.8958022		-1.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2600	1.153654	1.279111		3.9	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2620	1.231259	1.3494		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2650	1.033649	1.137421		5.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2380	1.481833E-02	1.432532E-02		-4.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.710564		4.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2460	3.518141	3.704886		5.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2350	1.350704	1.396409		-0.4	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21900	1.205187	1.212846		-1.4	30
Perfluorohexanoic acid (PFHxA)	A	25000	25800	0.7174549	0.766353		3.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	0.9992528		2.1	30
Perfluoroheptanoic acid (PFHpA)	A	25000	24100	0.5131844	0.520733		-3.6	30
Perfluorooctanoic acid (PFOA)	A	25000	25600	1.018894	1.07771		2.6	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23500	0.9862048	1.003068		1.1	30
Perfluorononanoic acid (PFNA)	A	25000	23800	0.9556153	0.9362592		-4.6	30
Perfluorodecanoic acid (PFDA)	A	25000	25900	1.019289	1.111468		3.6	30
N-EtFOSAA	A	25000	25700	0.7469728	0.768614		3.0	30
Perfluoroundecanoic acid (PFUnA)	A	25000	26700	0.9840387	1.085744		6.7	30
N-MeFOSAA	A	25000	25400	0.9030075	0.9491052		1.7	30
Perfluorododecanoic acid (PFDoA)	A	25000	26600	1.153654	1.308219		6.3	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26200	1.231259	1.349207		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	26400	1.033649	1.134729		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25400	1.481833E-02	1.529015E-02		1.7	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25100	1.641038	1.825779		6.4	30
9Cl-PF3ONS (F53B Major)	A	23300	25000	3.518141	3.980416		7.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24300	1.350704	1.445925		3.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2090	1.205187	1.159763		-5.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2400	0.7174549	0.7136453		-4.1	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2220	0.9422487	0.9521833		-2.7	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2200	0.5131844	0.4751433		-12.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2490	1.018894	1.046674		-0.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	0.9862048	0.9647938		-2.7	30
Perfluorononanoic acid (PFNA)	A	2500	2290	0.9556153	0.897298		-8.6	30
Perfluorodecanoic acid (PFDA)	A	2500	2500	1.019289	1.072089		-0.1	30
N-EtFOSAA	A	2500	2490	0.7469728	0.7685828		-0.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2700	0.9840387	1.099698		8.1	30
N-MeFOSAA	A	2500	2480	0.9030075	0.8993446		-0.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2610	1.153654	1.285782		4.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2540	1.231259	1.306517		1.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2560	1.033649	1.098145		2.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2340	1.481833E-02	1.407048E-02		-6.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.708613		4.2	30
9Cl-PF3ONS (F53B Major)	A	2330	2520	3.518141	3.798072		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2340	1.350704	1.388313		-1.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV5

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	22000	1.205187	1.219675		-0.9	30
Perfluorohexanoic acid (PFHxA)	A	25000	25700	0.7174549	0.7639828		2.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	1.001704		2.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	23800	0.5131844	0.5144887		-4.8	30
Perfluorooctanoic acid (PFOA)	A	25000	25400	1.018894	1.068279		1.7	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23600	0.9862048	1.009655		1.8	30
Perfluorononanoic acid (PFNA)	A	25000	23700	0.9556153	0.9312701		-5.1	30
Perfluorodecanoic acid (PFDA)	A	25000	26200	1.019289	1.125386		4.9	30
N-EtFOSAA	A	25000	26000	0.7469728	0.7756554		3.9	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27400	0.9840387	1.11475		9.6	30
N-MeFOSAA	A	25000	25900	0.9030075	0.9658908		3.4	30
Perfluorododecanoic acid (PFDoA)	A	25000	27400	1.153654	1.347163		9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26900	1.231259	1.383697		7.4	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27100	1.033649	1.164994		8.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	23700	1.481833E-02	1.427195E-02		-5.1	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25800	1.641038	1.874904		9.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25200	3.518141	4.012609		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24000	1.350704	1.426229		1.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

2151162

Phone: 612-607-6400
Fax: 612-607-6344

Doc # 381 Rev 4_01/08/2020

Page 1 of 1

1800 Elm Street SE
Minneapolis, MN 55414



Contact: https://www.pace-labs.com/contact-us/contact-environmental-sciences/
Tighte & Bond
120 Front Street, Worcester, MA 01610
Phone: 508-754-2201
Princeton Private Well Sampling
Princeton, MA
Project Number: P-0534017
Project Manager: Jeff Arps/Michael Scherer
Pace Analytical Quote Name/Number
Invoice Recipient: Tighte & Bond
Sampled By: M. Scherer

CHAIN OF CUSTODY RECORD

7-Day 10-Day Field Filtered Lab to Filter
 PFAS 10-Day (std) Due Date:
 1-Day 3-Day Field Filtered
 2-Day 4-Day Lab to Filter

PCB ONLY
 Format: PDF EXCEL
 Other: SOXHLET
 CLP Like Data Pkg Required:
 Email To: mjscherer@tightebond.com
 Fax To #: NON SOXHLET

ANALYSIS REQUESTED

Pace Analytical Work Order #	57 MERRIM											
	Beginning Date/Time	10/19/21										
Client Sample ID / Description	1200	Ending Date/Time	GRAB	Matrix Code	DW	Conc Code	U	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE

Pace Analytical Work Order #	Beginning Date/Time	Client Sample ID / Description	Ending Date/Time	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	MA MCP Required	CT RCP Required	RPD Certification Form Required	MA State DW Required

Client Comments: Please report the 14 compound list

Requested by (signature): *[Signature]* Date/Time: 10/19/21 1500

Received by (signature): *[Signature]* Date/Time: 10/19/21 1015

Relinquished by (signature): *[Signature]* Date/Time: 10/19/21 1550

Received by (signature): *[Signature]* Date/Time: 10/19/21 1550

Special Requirements: GW-1 MA MCP Required
 MCP Certification Form Required CT RCP Required
 RCP Certification Form Required MA State DW Required

Project Entity: Government Municipality MWRA WRTA
 Federal City School MBTA

1 Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

2 Preservation Codes:
 1 = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

3 Preservation Code:
 Courier Use Only
 Total Number Of: _____
 VIALS _____
 GLASS _____
 PLASTIC _____
 BACTERIA _____
 ENCORE _____

Glassware in the fridge? Y / N _____
 Glassware in freezer? Y / N _____
 Prepackaged Cooler? Y / N _____

*Pace Analytical is not responsible for missing samples from prepacked coolers.

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
 H - High; M - Medium; L - Low; C - Clean; U - Unknown

NEUAC and AIHA-LAP, LLC Accredited: Chromatogram
 AIHA-LAP, LLC

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T E B
 Received By ML Date 10/19/11 Time 1550
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

P-0534
November 30, 2021

James Camp
PO Box 2
Princeton, Massachusetts 01541

Re: **Residential Well Sampling**
58 Mountain Road, Princeton

Dear Mr. Camp:

Enclosed is a copy of the laboratory analytical results for the water samples collected from the residential well system located at 58 Mountain Road as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the water system samples on October 18, 2021 to monitor the granular activated carbon (GAC) point-of-entry treatment (POET) system that was installed in your home on July 7, 2020. The samples were submitted to Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts, a Massachusetts certified environmental laboratory, for per- and polyfluoroalkyl substances (PFAS) analysis. A copy of the laboratory analytical results for the above-referenced samples are attached to this letter. Analytical results have been compared to *Massachusetts Drinking Water Maximum Contaminant Levels (MMCLs, 310 CMR 22.00)* and *Massachusetts Contingency Plan Method 1 GW-1 Groundwater Standards (MCP, 310 CMR 40.0974)*. The influent concentrations detected during this sampling round exceed the GW-1 standard and MCL of 20 ppt for the sum of the six regulated compounds (PFAS6).

Water quality results indicate that the POET system installed in your home is effectively removing PFAS from your drinking water, as there were no detections in the midfluent or effluent samples. Tighe & Bond will continue to monitor the system in accordance with MassDEP requirements.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, if you have any questions regarding this information.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup





Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____
2. MCP phase of work during which the sampling will be/has been conducted:
- | | |
|--|---|
| Immediate Response Action | Phase III Feasibility Evaluation |
| Release Abatement Measure | Phase IV Remedy Implementation Plan |
| Utility-related Abatement Measure | Phase V/Remedy Operation Status |
| Phase I Initial Site Investigation | Post-Temporary Solution Operation, Maintenance and Monitoring |
| Phase II Comprehensive Site Assessment | Other _____ |
- (specify)
3. Description of property where sampling will be/has been conducted:
residential commercial industrial school/playground Other _____
(specify)
4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

-

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
 PFAS Drinking Water Summary
 Princeton, Massachusetts
 RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	58 Mountain Rd													
		2,131			8,428			22,138			50,278				
		2/26/2020	7/7/2020	7/14/2020	7/31/2020	7/31/2020	7/31/2020	8/31/2020	8/31/2020	8/31/2020	11/6/2020	11/6/2020	11/6/2020		
		POET INSTALLED	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	INF	MID	EFF	
EPA 537.1 (ng/L)															
Perfluorobutanesulfonic acid (PFBS)	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	15	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)	19		19	ND (2.0)	ND (2.0)	3.6	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	11	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	28	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)	29		31	ND (2.0)	ND (2.0)	6	ND (2.0)	ND (2.0)	94	ND (2.0)	ND (2.0)	18	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)	89		95	ND (2.0)	ND (2.0)	18	ND (2.0)	ND (2.0)	270	ND (2.0)	ND (2.0)	67	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)	210		230	ND (2.0)	ND (2.0)	35	ND (2.0)	ND (2.0)	19	ND (2.0)	ND (2.0)	130	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)	20		20	ND (2.0)	ND (2.0)	3.5	ND (2.0)	ND (2.0)	5.7	ND (2.0)	ND (2.0)	14	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)	6.2		6.9	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	4.2	ND (2.0)	ND (2.0)	ND (2.0)
N-EFOSAA	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTDA)	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)	ND (4.0)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)	373.2		401.9	ND (2.0)	ND (2.0)	66.1	ND (2.0)	ND (2.0)	431.7	ND (2.0)	ND (2.0)	244.2	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20		354.2	ND (2.0)	ND (2.0)	62.5	ND (2.0)	ND (2.0)	416.7	ND (2.0)	ND (2.0)	233.2	ND (2.0)	ND (2.0)	ND (2.0)

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	58 Mountain Rd								
		66,979			81,707			133,473		
		2/5/2021	4/21/2021	10/18/2021	INF	MID	EFF	INF	MID	EFF
EPA 537.1 (ng/L)										
Perfluorobutanesulfonic acid (PFBS)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)	5	ND (2.0)	ND (2.0)	15	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)	9	ND (2.0)	ND (2.0)	26	ND (2.0)	ND (2.0)	36	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)	23	ND (2.0)	ND (2.0)	83	ND (2.0)	ND (2.0)	120	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)	44	ND (2.0)	ND (2.0)	180	ND (2.0)	ND (2.0)	290	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)	6.3	ND (2.0)	ND (2.0)	16	ND (2.0)	ND (2.0)	25	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)	ND (2.0)	ND (2.0)	ND (2.0)	4.4	ND (2.0)	ND (2.0)	8.2	ND (2.0)	ND (2.0)	ND (2.0)
N-EFOSAA	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTDA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)	87.7	ND (2.0)	ND (2.0)	324.4	ND (2.0)	ND (2.0)	501.2	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20	82.7	ND (2.0)	309.4	ND (2.0)	ND (2.0)	479.2	ND (2.0)	ND (2.0)	ND (2.0)

NOTES:
 Gray colored cells indicate those 6 compounds included in the regulated PFAS Total
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard
 MMCL is Massachusetts Maximum Contaminant Level

October 27, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

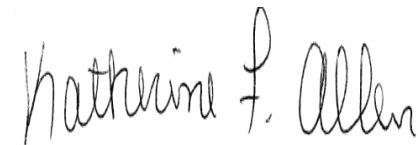
Project Location: 58 Mountain Rd, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1157

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/27/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1157

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 58 Mountain Rd, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
58 Mountain INF	21J1157-01	Drinking Water		EPA 537.1	
58 Mountain MID	21J1157-02	Drinking Water		EPA 537.1	
58 Mountain EFF	21J1157-03	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 58 Mountain Rd, Princeton, MA

Sample Description:

Work Order: 21J1157

Date Received: 10/19/2021

Field Sample #: 58 Mountain INF

Sampled: 10/18/2021 12:00

Sample ID: 21J1157-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:20	BLH
Perfluorohexanoic acid (PFHxA)	22	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:20	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:20	BLH
Perfluoroheptanoic acid (PFHpA)	36	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:20	BLH
Perfluorooctanoic acid (PFOA)	120	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:20	BLH
Perfluorooctanesulfonic acid (PFOS)	290	19		ng/L	10		EPA 537.1	10/22/21	10/26/21 16:34	BLH
Perfluorononanoic acid (PFNA)	25	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:20	BLH
Perfluorodecanoic acid (PFDA)	8.2	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:20	BLH
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:20	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:20	BLH
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:20	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:20	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:20	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:20	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:20	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:20	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:20	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:20	BLH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
13C-PFHxA	110	70-130	10/26/21 13:20
13C-PFHxA	100	70-130	10/26/21 16:34
M3HFPO-DA	95.6	70-130	10/26/21 16:34
M3HFPO-DA	102	70-130	10/26/21 13:20
13C-PFDA	97.6	70-130	10/26/21 16:34
13C-PFDA	103	70-130	10/26/21 13:20
d5-NEtFOSAA	97.8	70-130	10/26/21 16:34
d5-NEtFOSAA	109	70-130	10/26/21 13:20

Project Location: 58 Mountain Rd, Princeton, MA

Sample Description:

Work Order: 21J1157

Date Received: 10/19/2021

Field Sample #: 58 Mountain MID

Sampled: 10/18/2021 12:00

Sample ID: 21J1157-02

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date	Date/Time	Analyst
		RL	MA ORSG					Prepared	Analyzed	
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:27	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:27	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:27	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:27	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:27	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:27	BLH
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:27	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:27	BLH
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:27	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:27	BLH
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:27	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:27	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:27	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:27	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:27	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:27	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:27	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:27	BLH
Surrogates		% Recovery		Recovery Limits		Flag/Qual				
13C-PFHxA		119		70-130					10/26/21 13:27	
M3HFPO-DA		117		70-130					10/26/21 13:27	
13C-PFDA		110		70-130					10/26/21 13:27	
d5-NEtFOSAA		120		70-130					10/26/21 13:27	

Project Location: 58 Mountain Rd, Princeton, MA

Sample Description:

Work Order: 21J1157

Date Received: 10/19/2021

Field Sample #: 58 Mountain EFF

Sampled: 10/18/2021 12:00

Sample ID: 21J1157-03

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:34	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:34	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:34	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:34	BLH
Perfluorooctanoic acid (PFOA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:34	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:34	BLH
Perfluorononanoic acid (PFNA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:34	BLH
Perfluorodecanoic acid (PFDA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:34	BLH
N-EtFOSAA	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:34	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:34	BLH
N-MeFOSAA	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:34	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:34	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:34	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:34	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:34	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:34	BLH
9Cl-PF3ONS (F53B Major)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:34	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8		ng/L	1		EPA 537.1	10/22/21	10/26/21 13:34	BLH
Surrogates		% Recovery	Recovery Limits							
13C-PFHxA		120	70-130						10/26/21 13:34	
M3HFPO-DA		117	70-130						10/26/21 13:34	
13C-PFDA		111	70-130						10/26/21 13:34	
d5-NEtFOSAA		120	70-130						10/26/21 13:34	

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1157-01 [58 Mountain INF]	B292862	263	1.00	10/22/21
21J1157-01RE1 [58 Mountain INF]	B292862	263	1.00	10/22/21
21J1157-02 [58 Mountain MID]	B292862	269	1.00	10/22/21
21J1157-03 [58 Mountain EFF]	B292862	272	1.00	10/22/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B292862 - EPA 537.1

Blank (B292862-BLK1)

Prepared: 10/22/21 Analyzed: 10/26/21

Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	43.8		ng/L	37.3		117	70-130			
Surrogate: M3HFPO-DA	43.4		ng/L	37.3		116	70-130			
Surrogate: 13C-PFDA	37.9		ng/L	37.3		102	70-130			
Surrogate: d5-NEtFOSAA	170		ng/L	149		114	70-130			

LCS (B292862-BS1)

Prepared: 10/22/21 Analyzed: 10/26/21

Perfluorobutanesulfonic acid (PFBS)	15.8	1.9	ng/L	16.5		95.7	70-130			
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.6	70-130			
Perfluorohexanesulfonic acid (PFHxS)	17.0	1.9	ng/L	17.0		99.8	70-130			
Perfluoroheptanoic acid (PFHpA)	16.3	1.9	ng/L	18.6		87.6	70-130			
Perfluorooctanoic acid (PFOA)	17.6	1.9	ng/L	18.6		94.7	70-130			
Perfluorooctanesulfonic acid (PFOS)	15.8	1.9	ng/L	17.2		91.4	70-130			
Perfluorononanoic acid (PFNA)	15.4	1.9	ng/L	18.6		83.1	70-130			
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130			
N-EtFOSAA	17.4	1.9	ng/L	18.6		93.6	70-130			
Perfluoroundecanoic acid (PFUnA)	17.8	1.9	ng/L	18.6		95.7	70-130			
N-MeFOSAA	17.3	1.9	ng/L	18.6		93.2	70-130			
Perfluorododecanoic acid (PFDoA)	17.7	1.9	ng/L	18.6		95.2	70-130			
Perfluorotridecanoic acid (PFTTrDA)	17.2	1.9	ng/L	18.6		92.4	70-130			
Perfluorotetradecanoic acid (PFTA)	17.4	1.9	ng/L	18.6		93.8	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.3	1.9	ng/L	18.6		93.1	70-130			
11Cl-PF3OUdS (F53B Minor)	18.0	1.9	ng/L	17.5		103	70-130			
9Cl-PF3ONS (F53B Major)	17.9	1.9	ng/L	17.3		103	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.8	1.9	ng/L	17.6		95.4	70-130			
Surrogate: 13C-PFHxA	41.0		ng/L	37.2		110	70-130			
Surrogate: M3HFPO-DA	40.4		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.9		ng/L	37.2		99.2	70-130			
Surrogate: d5-NEtFOSAA	163		ng/L	149		109	70-130			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292862 - EPA 537.1										
LCS Dup (B292862-BSD1)										
					Prepared: 10/22/21 Analyzed: 10/26/21					
Perfluorobutanesulfonic acid (PFBS)	15.5	1.9	ng/L	16.5		93.8	70-130	1.88	30	
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.7	70-130	0.343	30	
Perfluorohexanesulfonic acid (PFHxS)	17.1	1.9	ng/L	17.0		101	70-130	1.06	30	
Perfluoroheptanoic acid (PFHpA)	16.1	1.9	ng/L	18.6		86.3	70-130	1.32	30	
Perfluorooctanoic acid (PFOA)	17.1	1.9	ng/L	18.6		91.9	70-130	2.72	30	
Perfluorooctanesulfonic acid (PFOS)	15.4	1.9	ng/L	17.3		89.0	70-130	2.44	30	
Perfluorononanoic acid (PFNA)	15.3	1.9	ng/L	18.6		82.0	70-130	1.12	30	
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130	0.149	30	
N-EtFOSAA	17.1	1.9	ng/L	18.6		91.7	70-130	1.81	30	
Perfluoroundecanoic acid (PFUnA)	18.0	1.9	ng/L	18.6		96.5	70-130	1.08	30	
N-MeFOSAA	17.8	1.9	ng/L	18.6		95.6	70-130	2.69	30	
Perfluorododecanoic acid (PFDoA)	17.3	1.9	ng/L	18.6		92.9	70-130	2.31	30	
Perfluorotridecanoic acid (PFTrDA)	17.3	1.9	ng/L	18.6		92.9	70-130	0.701	30	
Perfluorotetradecanoic acid (PFTA)	17.1	1.9	ng/L	18.6		92.0	70-130	1.83	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.1	1.9	ng/L	18.6		91.9	70-130	1.05	30	
11Cl-PF3OUdS (F53B Minor)	17.8	1.9	ng/L	17.6		101	70-130	1.35	30	
9Cl-PF3ONS (F53B Major)	17.6	1.9	ng/L	17.4		101	70-130	2.07	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.7	1.9	ng/L	17.6		95.1	70-130	0.145	30	
Surrogate: 13C-PFHxA	40.7		ng/L	37.2		109	70-130			
Surrogate: M3HFPO-DA	40.5		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.7		ng/L	37.2		98.5	70-130			
Surrogate: d5-NEtFOSAA	166		ng/L	149		111	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

SSR Samantha S Runyon
 STATION PDF Management Station
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BAA Bonita A. Abanulo

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	444	442	1.205187	1.224447		-0.5	30
Perfluorohexanoic acid (PFHxA)	A	500	493	0.7174549	0.7339039		-1.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	467	0.9422487	0.9997435		2.2	30
Perfluoroheptanoic acid (PFHpA)	A	500	429	0.5131844	0.4640475		-14.1	30
Perfluorooctanoic acid (PFOA)	A	500	551	1.018894	1.158365		10.3	30
Perfluorooctanesulfonic acid (PFOS)	A	464	478	0.9862048	1.021105		2.9	30
Perfluorononanoic acid (PFNA)	A	500	412	0.9556153	0.8088272		-17.6	30
Perfluorodecanoic acid (PFDA)	A	500	480	1.019289	1.029208		-4.1	30
N-EtFOSAA	A	500	483	0.7469728	0.748993		-3.4	30
Perfluoroundecanoic acid (PFUnA)	A	500	522	0.9840387	1.060965		4.3	30
N-MeFOSAA	A	500	507	0.9030075	0.9168343		1.3	30
Perfluorododecanoic acid (PFDoA)	A	500	500	1.153654	1.231809		0.07	30
Perfluorotridecanoic acid (PFTrDA)	A	500	453	1.231259	1.166599		-9.4	30
Perfluorotetradecanoic acid (PFTA)	A	500	467	1.033649	1.001868		-6.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	549	1.481833E-02	1.651154E-02		9.8	30
11Cl-PF3OUdS (F53B Minor)	A	472	474	1.641038	1.639428		0.3	30
9Cl-PF3ONS (F53B Major)	A	466	466	3.518141	3.5012		0.09	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	446	1.350704	1.324111		-5.5	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2080	1.205187	1.151823		-6.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2450	0.7174549	0.7276259		-2.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2280	0.9422487	0.9796582		0.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2190	0.5131844	0.4730903		-12.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2540	1.018894	1.065353		1.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2240	0.9862048	0.956855		-3.5	30
Perfluorononanoic acid (PFNA)	A	2500	2280	0.9556153	0.8939886		-8.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2470	1.019289	1.059261		-1.3	30
N-EtFOSAA	A	2500	2540	0.7469728	0.78652		1.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2690	0.9840387	1.094937		7.7	30
N-MeFOSAA	A	2500	2470	0.9030075	0.8958022		-1.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2600	1.153654	1.279111		3.9	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2620	1.231259	1.3494		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2650	1.033649	1.137421		5.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2380	1.481833E-02	1.432532E-02		-4.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.710564		4.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2460	3.518141	3.704886		5.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2350	1.350704	1.396409		-0.4	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21900	1.205187	1.212846		-1.4	30
Perfluorohexanoic acid (PFHxA)	A	25000	25800	0.7174549	0.766353		3.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	0.9992528		2.1	30
Perfluoroheptanoic acid (PFHpA)	A	25000	24100	0.5131844	0.520733		-3.6	30
Perfluorooctanoic acid (PFOA)	A	25000	25600	1.018894	1.07771		2.6	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23500	0.9862048	1.003068		1.1	30
Perfluorononanoic acid (PFNA)	A	25000	23800	0.9556153	0.9362592		-4.6	30
Perfluorodecanoic acid (PFDA)	A	25000	25900	1.019289	1.111468		3.6	30
N-EtFOSAA	A	25000	25700	0.7469728	0.768614		3.0	30
Perfluoroundecanoic acid (PFUnA)	A	25000	26700	0.9840387	1.085744		6.7	30
N-MeFOSAA	A	25000	25400	0.9030075	0.9491052		1.7	30
Perfluorododecanoic acid (PFDoA)	A	25000	26600	1.153654	1.308219		6.3	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26200	1.231259	1.349207		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	26400	1.033649	1.134729		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25400	1.481833E-02	1.529015E-02		1.7	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25100	1.641038	1.825779		6.4	30
9Cl-PF3ONS (F53B Major)	A	23300	25000	3.518141	3.980416		7.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24300	1.350704	1.445925		3.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2090	1.205187	1.159763		-5.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2400	0.7174549	0.7136453		-4.1	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2220	0.9422487	0.9521833		-2.7	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2200	0.5131844	0.4751433		-12.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2490	1.018894	1.046674		-0.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	0.9862048	0.9647938		-2.7	30
Perfluorononanoic acid (PFNA)	A	2500	2290	0.9556153	0.897298		-8.6	30
Perfluorodecanoic acid (PFDA)	A	2500	2500	1.019289	1.072089		-0.1	30
N-EtFOSAA	A	2500	2490	0.7469728	0.7685828		-0.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2700	0.9840387	1.099698		8.1	30
N-MeFOSAA	A	2500	2480	0.9030075	0.8993446		-0.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2610	1.153654	1.285782		4.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2540	1.231259	1.306517		1.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2560	1.033649	1.098145		2.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2340	1.481833E-02	1.407048E-02		-6.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.708613		4.2	30
9Cl-PF3ONS (F53B Major)	A	2330	2520	3.518141	3.798072		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2340	1.350704	1.388313		-1.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV5

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	22000	1.205187	1.219675		-0.9	30
Perfluorohexanoic acid (PFHxA)	A	25000	25700	0.7174549	0.7639828		2.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	1.001704		2.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	23800	0.5131844	0.5144887		-4.8	30
Perfluorooctanoic acid (PFOA)	A	25000	25400	1.018894	1.068279		1.7	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23600	0.9862048	1.009655		1.8	30
Perfluorononanoic acid (PFNA)	A	25000	23700	0.9556153	0.9312701		-5.1	30
Perfluorodecanoic acid (PFDA)	A	25000	26200	1.019289	1.125386		4.9	30
N-EtFOSAA	A	25000	26000	0.7469728	0.7756554		3.9	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27400	0.9840387	1.11475		9.6	30
N-MeFOSAA	A	25000	25900	0.9030075	0.9658908		3.4	30
Perfluorododecanoic acid (PFDoA)	A	25000	27400	1.153654	1.347163		9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26900	1.231259	1.383697		7.4	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27100	1.033649	1.164994		8.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	23700	1.481833E-02	1.427195E-02		-5.1	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25800	1.641038	1.874904		9.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25200	3.518141	4.012609		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24000	1.350704	1.426229		1.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>

Address: Tighe & Bond
 120 Front Street, Worcester, MA 01610

Phone: 508-734-2201
 Princeton Private Well Sampling
 Princeton, MA

Project Number: P-0534017

Project Manager: Jeff Arps/Michael Scherer

Pace Analytical Quote Name/Number

Invoice Recipient: Tighe & Bond

Sampled By: M Scherer

CHAIN OF CUSTODY RECORD

7-Day 10-Day Field Filtered
 PFAS 10-Day (std) Due Date: _____
 1-Day 3-Day Field Filtered
 2-Day 4-Day Lab to Filter
 Format: PDF EXCEL
 Other: _____
 CLP Like Data Pkg Required:
 Email To: mjscherer@tighebond.com
 Fax To #: _____

ANALYSIS REQUESTED

Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	*Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
1 58 Mountain INF	10/19/21	12:00	GRAB	DW	U			2		
2 58 Mountain Mid								2		
3 58 Mountain EFF								2		

Client Comments: Please report the 14 compound list

Relinquished by: (signature) *[Signature]* Date/Time: 10/18/21 15:00
 Received by: (signature) *[Signature]* Date/Time: 10/19/21 16:15
 Relinquished by: (signature) *[Signature]* Date/Time: 10/19/21 15:50
 Received by: (signature) *[Signature]* Date/Time: 10/19/21 15:50
 Relinquished by: (signature) _____ Date/Time: _____
 Received by: (signature) _____ Date/Time: _____
 Relinquished by: (signature) _____ Date/Time: _____
 Received by: (signature) _____ Date/Time: _____

1 Preservation Codes:
 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

2 Preservation Codes:
 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

Special Requirements: MA MCP Required MA MCP Certification Form Required CT RCP Required RCP Certification Form Required MA State DW Required PWSID # _____

Project Entity: Government Federal City Municipality 21 J Brownfield MWRA School MBTA WRTA Chromatogram AIHA-LAP, LLC Other

Comments: _____

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T E B

Received By ML Date 10/19/11 Time 1550

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____

Is there enough Volume? T

Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

P-0534
November 30, 2021

William and Gretchen Aubuchon
105 Merriam Road
Princeton, Massachusetts 01541

Re: **Residential Well Sampling**
105 Merriam Road, Princeton

Dear Mr. and Mrs. Aubuchon:

Enclosed is a copy of the laboratory analytical results for the water sample collected from the residential well located at 105 Merriam Road as part of environmental monitoring required by the Massachusetts Department of Environmental Protection (MassDEP).

Tighe & Bond personnel collected the residential well water sample on October 18, 2021, and Con Test Analytical Laboratory (Con Test) of East Longmeadow, Massachusetts analyzed the samples for per- and polyfluoroalkyl substances (PFAS). Con Test is a Massachusetts certified environmental laboratory.

Your laboratory results indicate that PFAS was not detected above laboratory reporting limits in the water sample collected on October 18, 2021. A copy of the lab report is attached to this letter.

Please call the Princeton Town Administrator, Sherry Patch, at (978) 464-2102 or the undersigned at (413) 572-3227, with any questions.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey L. Arps, LSP
Director, Remediation & Field Services

Enclosures

Copy: Sherry Patch, Princeton Town Administrator
MassDEP, Bureau of Waste Site Cleanup



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

-

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: _____
City/Town: _____ Zip Code: _____

B. This notice is being provided to the following party:

1. Name: _____
2. Street Address: _____
City/Town: _____ Zip Code: _____

C. This notice is being given to inform its recipient (the party listed in Section B):

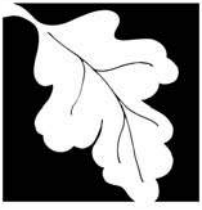
1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.
2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.
3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: _____
City/Town: _____ Zip Code: _____
2. MCP phase of work during which the sampling will be/has been conducted:
- | | |
|--|---|
| Immediate Response Action | Phase III Feasibility Evaluation |
| Release Abatement Measure | Phase IV Remedy Implementation Plan |
| Utility-related Abatement Measure | Phase V/Remedy Operation Status |
| Phase I Initial Site Investigation | Post-Temporary Solution Operation, Maintenance and Monitoring |
| Phase II Comprehensive Site Assessment | Other _____ |
- (specify)
3. Description of property where sampling will be/has been conducted:
residential commercial industrial school/playground Other _____
(specify)
4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

E. Contact information related to the party providing this notice:

Contact Name: _____
Street Address: _____
City/Town: _____ Zip Code: _____
Telephone: _____ Email: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

-

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at <http://www.mass.gov/eea/agencies/massdep/cleanup>. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See <http://public.dep.state.ma.us/SearchableSites2/Search.aspx> to view site-specific files on-line or <http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html> if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

TABLE 1
PFAS Drinking Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Massachusetts Contingency Plan GW-1 Standard & MMCL	105 Merriam Rd				
		2/28/2020	7/21/2020	1/20/2021	4/26/2021	10/18/2021
Well Depth (feet)		UNKNOWN				
Sampling Date						
EPA 537.1 (ng/L)						
Perfluorobutanesulfonic acid (PFBS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanoic acid (PFHxA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorohexanesulfonic acid (PFHxS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroheptanoic acid (PFHpA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanoic acid (PFOA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorooctanesulfonic acid (PFOS)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorononanoic acid (PFNA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorodecanoic acid (PFDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-EtFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluoroundecanoic acid (PFUnA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-MeFOSAA		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorododecanoic acid (PFDoA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotridecanoic acid (PFTrDA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Perfluorotetradecanoic acid (PFTA)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Total (All Compounds)		ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Regulated Total	20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)

NOTES:

Gray colored cells indicate those 6 compounds included in the regulated PFAS Total

ND = Not detected above the lab reporting limits shown in parentheses.

Bolded values exceed the proposed Method 1 Standard

MMCL is Massachusetts Maximum Contaminant Level

October 27, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

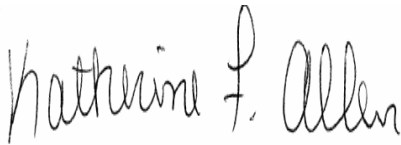
Project Location: 105 Merriam, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1148

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/27/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1148

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 105 Merriam, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
105 Merriam	21J1148-01	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 Merriam, Princeton, MA

Sample Description:

Work Order: 21J1148

Date Received: 10/19/2021

Field Sample #: 105 Merriam

Sampled: 10/18/2021 12:00

Sample ID: 21J1148-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date	Date/Time	Analyst
		RL	MA ORSG					Prepared	Analyzed	
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:44	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:44	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:44	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:44	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:44	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:44	BLH
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:44	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:44	BLH
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:44	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:44	BLH
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:44	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:44	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:44	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:44	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:44	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:44	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:44	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	10/22/21	10/26/21 12:44	BLH
Surrogates		% Recovery		Recovery Limits		Flag/Qual				
13C-PFHxA		108		70-130					10/26/21 12:44	
M3HFPO-DA		103		70-130					10/26/21 12:44	
13C-PFDA		103		70-130					10/26/21 12:44	
d5-NEtFOSAA		110		70-130					10/26/21 12:44	

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1148-01 [105 Merriam]	B292862	263	1.00	10/22/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B292862 - EPA 537.1

Blank (B292862-BLK1)

Prepared: 10/22/21 Analyzed: 10/26/21

Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	43.8		ng/L	37.3		117	70-130			
Surrogate: M3HFPO-DA	43.4		ng/L	37.3		116	70-130			
Surrogate: 13C-PFDA	37.9		ng/L	37.3		102	70-130			
Surrogate: d5-NEtFOSAA	170		ng/L	149		114	70-130			

LCS (B292862-BS1)

Prepared: 10/22/21 Analyzed: 10/26/21

Perfluorobutanesulfonic acid (PFBS)	15.8	1.9	ng/L	16.5		95.7	70-130			
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.6	70-130			
Perfluorohexanesulfonic acid (PFHxS)	17.0	1.9	ng/L	17.0		99.8	70-130			
Perfluoroheptanoic acid (PFHpA)	16.3	1.9	ng/L	18.6		87.6	70-130			
Perfluorooctanoic acid (PFOA)	17.6	1.9	ng/L	18.6		94.7	70-130			
Perfluorooctanesulfonic acid (PFOS)	15.8	1.9	ng/L	17.2		91.4	70-130			
Perfluorononanoic acid (PFNA)	15.4	1.9	ng/L	18.6		83.1	70-130			
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130			
N-EtFOSAA	17.4	1.9	ng/L	18.6		93.6	70-130			
Perfluoroundecanoic acid (PFUnA)	17.8	1.9	ng/L	18.6		95.7	70-130			
N-MeFOSAA	17.3	1.9	ng/L	18.6		93.2	70-130			
Perfluorododecanoic acid (PFDoA)	17.7	1.9	ng/L	18.6		95.2	70-130			
Perfluorotridecanoic acid (PFTTrDA)	17.2	1.9	ng/L	18.6		92.4	70-130			
Perfluorotetradecanoic acid (PFTA)	17.4	1.9	ng/L	18.6		93.8	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.3	1.9	ng/L	18.6		93.1	70-130			
11Cl-PF3OUdS (F53B Minor)	18.0	1.9	ng/L	17.5		103	70-130			
9Cl-PF3ONS (F53B Major)	17.9	1.9	ng/L	17.3		103	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.8	1.9	ng/L	17.6		95.4	70-130			
Surrogate: 13C-PFHxA	41.0		ng/L	37.2		110	70-130			
Surrogate: M3HFPO-DA	40.4		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.9		ng/L	37.2		99.2	70-130			
Surrogate: d5-NEtFOSAA	163		ng/L	149		109	70-130			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292862 - EPA 537.1										
LCS Dup (B292862-BSD1)										
					Prepared: 10/22/21 Analyzed: 10/26/21					
Perfluorobutanesulfonic acid (PFBS)	15.5	1.9	ng/L	16.5		93.8	70-130	1.88	30	
Perfluorohexanoic acid (PFHxA)	17.8	1.9	ng/L	18.6		95.7	70-130	0.343	30	
Perfluorohexanesulfonic acid (PFHxS)	17.1	1.9	ng/L	17.0		101	70-130	1.06	30	
Perfluoroheptanoic acid (PFHpA)	16.1	1.9	ng/L	18.6		86.3	70-130	1.32	30	
Perfluorooctanoic acid (PFOA)	17.1	1.9	ng/L	18.6		91.9	70-130	2.72	30	
Perfluorooctanesulfonic acid (PFOS)	15.4	1.9	ng/L	17.3		89.0	70-130	2.44	30	
Perfluorononanoic acid (PFNA)	15.3	1.9	ng/L	18.6		82.0	70-130	1.12	30	
Perfluorodecanoic acid (PFDA)	17.0	1.9	ng/L	18.6		91.4	70-130	0.149	30	
N-EtFOSAA	17.1	1.9	ng/L	18.6		91.7	70-130	1.81	30	
Perfluoroundecanoic acid (PFUnA)	18.0	1.9	ng/L	18.6		96.5	70-130	1.08	30	
N-MeFOSAA	17.8	1.9	ng/L	18.6		95.6	70-130	2.69	30	
Perfluorododecanoic acid (PFDoA)	17.3	1.9	ng/L	18.6		92.9	70-130	2.31	30	
Perfluorotridecanoic acid (PFTrDA)	17.3	1.9	ng/L	18.6		92.9	70-130	0.701	30	
Perfluorotetradecanoic acid (PFTA)	17.1	1.9	ng/L	18.6		92.0	70-130	1.83	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	17.1	1.9	ng/L	18.6		91.9	70-130	1.05	30	
11Cl-PF3OUdS (F53B Minor)	17.8	1.9	ng/L	17.6		101	70-130	1.35	30	
9Cl-PF3ONS (F53B Major)	17.6	1.9	ng/L	17.4		101	70-130	2.07	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	16.7	1.9	ng/L	17.6		95.1	70-130	0.145	30	
Surrogate: 13C-PFHxA	40.7		ng/L	37.2		109	70-130			
Surrogate: M3HFPO-DA	40.5		ng/L	37.2		109	70-130			
Surrogate: 13C-PFDA	36.7		ng/L	37.2		98.5	70-130			
Surrogate: d5-NEtFOSAA	166		ng/L	149		111	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BAA Bonita A. Abanulo

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	444	442	1.205187	1.224447		-0.5	30
Perfluorohexanoic acid (PFHxA)	A	500	493	0.7174549	0.7339039		-1.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	467	0.9422487	0.9997435		2.2	30
Perfluoroheptanoic acid (PFHpA)	A	500	429	0.5131844	0.4640475		-14.1	30
Perfluorooctanoic acid (PFOA)	A	500	551	1.018894	1.158365		10.3	30
Perfluorooctanesulfonic acid (PFOS)	A	464	478	0.9862048	1.021105		2.9	30
Perfluorononanoic acid (PFNA)	A	500	412	0.9556153	0.8088272		-17.6	30
Perfluorodecanoic acid (PFDA)	A	500	480	1.019289	1.029208		-4.1	30
N-EtFOSAA	A	500	483	0.7469728	0.748993		-3.4	30
Perfluoroundecanoic acid (PFUnA)	A	500	522	0.9840387	1.060965		4.3	30
N-MeFOSAA	A	500	507	0.9030075	0.9168343		1.3	30
Perfluorododecanoic acid (PFDoA)	A	500	500	1.153654	1.231809		0.07	30
Perfluorotridecanoic acid (PFTrDA)	A	500	453	1.231259	1.166599		-9.4	30
Perfluorotetradecanoic acid (PFTA)	A	500	467	1.033649	1.001868		-6.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	549	1.481833E-02	1.651154E-02		9.8	30
11Cl-PF3OUdS (F53B Minor)	A	472	474	1.641038	1.639428		0.3	30
9Cl-PF3ONS (F53B Major)	A	466	466	3.518141	3.5012		0.09	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	446	1.350704	1.324111		-5.5	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2080	1.205187	1.151823		-6.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2450	0.7174549	0.7276259		-2.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2280	0.9422487	0.9796582		0.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2190	0.5131844	0.4730903		-12.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2540	1.018894	1.065353		1.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2240	0.9862048	0.956855		-3.5	30
Perfluorononanoic acid (PFNA)	A	2500	2280	0.9556153	0.8939886		-8.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2470	1.019289	1.059261		-1.3	30
N-EtFOSAA	A	2500	2540	0.7469728	0.78652		1.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2690	0.9840387	1.094937		7.7	30
N-MeFOSAA	A	2500	2470	0.9030075	0.8958022		-1.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2600	1.153654	1.279111		3.9	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2620	1.231259	1.3494		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2650	1.033649	1.137421		5.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2380	1.481833E-02	1.432532E-02		-4.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.710564		4.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2460	3.518141	3.704886		5.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2350	1.350704	1.396409		-0.4	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21900	1.205187	1.212846		-1.4	30
Perfluorohexanoic acid (PFHxA)	A	25000	25800	0.7174549	0.766353		3.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	0.9992528		2.1	30
Perfluoroheptanoic acid (PFHpA)	A	25000	24100	0.5131844	0.520733		-3.6	30
Perfluorooctanoic acid (PFOA)	A	25000	25600	1.018894	1.07771		2.6	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23500	0.9862048	1.003068		1.1	30
Perfluorononanoic acid (PFNA)	A	25000	23800	0.9556153	0.9362592		-4.6	30
Perfluorodecanoic acid (PFDA)	A	25000	25900	1.019289	1.111468		3.6	30
N-EtFOSAA	A	25000	25700	0.7469728	0.768614		3.0	30
Perfluoroundecanoic acid (PFUnA)	A	25000	26700	0.9840387	1.085744		6.7	30
N-MeFOSAA	A	25000	25400	0.9030075	0.9491052		1.7	30
Perfluorododecanoic acid (PFDoA)	A	25000	26600	1.153654	1.308219		6.3	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26200	1.231259	1.349207		4.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	26400	1.033649	1.134729		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25400	1.481833E-02	1.529015E-02		1.7	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25100	1.641038	1.825779		6.4	30
9Cl-PF3ONS (F53B Major)	A	23300	25000	3.518141	3.980416		7.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24300	1.350704	1.445925		3.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2090	1.205187	1.159763		-5.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2400	0.7174549	0.7136453		-4.1	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2220	0.9422487	0.9521833		-2.7	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2200	0.5131844	0.4751433		-12.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2490	1.018894	1.046674		-0.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	0.9862048	0.9647938		-2.7	30
Perfluorononanoic acid (PFNA)	A	2500	2290	0.9556153	0.897298		-8.6	30
Perfluorodecanoic acid (PFDA)	A	2500	2500	1.019289	1.072089		-0.1	30
N-EtFOSAA	A	2500	2490	0.7469728	0.7685828		-0.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2700	0.9840387	1.099698		8.1	30
N-MeFOSAA	A	2500	2480	0.9030075	0.8993446		-0.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2610	1.153654	1.285782		4.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2540	1.231259	1.306517		1.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2560	1.033649	1.098145		2.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2340	1.481833E-02	1.407048E-02		-6.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2460	1.641038	1.708613		4.2	30
9Cl-PF3ONS (F53B Major)	A	2330	2520	3.518141	3.798072		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2340	1.350704	1.388313		-1.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064711-CCV5

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	22000	1.205187	1.219675		-0.9	30
Perfluorohexanoic acid (PFHxA)	A	25000	25700	0.7174549	0.7639828		2.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	23300	0.9422487	1.001704		2.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	23800	0.5131844	0.5144887		-4.8	30
Perfluorooctanoic acid (PFOA)	A	25000	25400	1.018894	1.068279		1.7	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	23600	0.9862048	1.009655		1.8	30
Perfluorononanoic acid (PFNA)	A	25000	23700	0.9556153	0.9312701		-5.1	30
Perfluorodecanoic acid (PFDA)	A	25000	26200	1.019289	1.125386		4.9	30
N-EtFOSAA	A	25000	26000	0.7469728	0.7756554		3.9	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27400	0.9840387	1.11475		9.6	30
N-MeFOSAA	A	25000	25900	0.9030075	0.9658908		3.4	30
Perfluorododecanoic acid (PFDoA)	A	25000	27400	1.153654	1.347163		9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	26900	1.231259	1.383697		7.4	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27100	1.033649	1.164994		8.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	23700	1.481833E-02	1.427195E-02		-5.1	30
11Cl-PF3OUdS (F53B Minor)	A	23600	25800	1.641038	1.874904		9.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25200	3.518141	4.012609		8.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	24000	1.350704	1.426229		1.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

2151198

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Project Location: Princeton Private Well Sampling
 Princeton, MA
Project Number: P-0534017
Project Manager: Jeff Arps/Michael Scherer
Pace Analytical Quote Name/Number:
Invoice Recipient: Tighe & Bond
Sampled By: M Scherer

Pace Analytical Work Order # 105 MEEERAA
Client Sample ID / Description
Beginning Date/Time 10/19/21 1200
Ending Date/Time 1200

Format: PDF EXCEL
Other: SOXHLET
 CLP Like Data Pkg Required:
Email To: mischerer@tighebond.com
Fax To #: NON SOXHLET

Requested Date/Time	Requested Date/Time	Requested Date/Time	Requested Date/Time	Requested Date/Time	Requested Date/Time	Requested Date/Time	Requested Date/Time	Requested Date/Time	Requested Date/Time	Requested Date/Time	Requested Date/Time	Requested Date/Time	Requested Date/Time
7-Day	<input type="checkbox"/>	10-Day	<input type="checkbox"/>	Field Filtered	<input type="checkbox"/>	PFAS 10-Day (std)	<input type="checkbox"/>	Due Date:					
1-Day	<input type="checkbox"/>	3-Day	<input type="checkbox"/>	Field Filtered	<input type="checkbox"/>	2-Day	<input type="checkbox"/>	4-Day	<input type="checkbox"/>	Lab to Filter			
Special Requirements: AA MCP Required <input checked="" type="checkbox"/> MCP Certification Form Required <input type="checkbox"/> CT RCP Required <input type="checkbox"/> RCP Certification Form Required <input type="checkbox"/> MA State DW Required <input type="checkbox"/> PWSID # _____ Other _____													
Project Entity: Government <input type="checkbox"/> Municipality <input type="checkbox"/> Federal <input type="checkbox"/> City <input type="checkbox"/> City: 21 J State: Brownfield													

Relinquished by (signature): *Michael Scherer*
Received by (signature): *[Signature]*
Relinquished by (signature): *[Signature]*
Received by (signature): *[Signature]*
Relinquished by (signature): *[Signature]*
Received by (signature): *[Signature]*

Client Comments: Please report the 14 compound list

Matrix Code	Sample ID	Sample Description	Matrix Code	Conc Code	Vials	Glass	Plastic	Bacteria	Encore	Preservation Code	Analysis Requested
GW		Ground Water	DW	U	2					PFAS 537.1	
WW		Waste Water									
DW		Drinking Water									
A		Air									
S		Soil									
SL		Sludge									
SOL		Solid									
O		Other (please define)									

1 Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

2 Preservation Codes:
 1 = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
 H - High; M - Medium; L - Low; C - Clean; U - Unknown

Other: Chromatogram
 AWRA WRTA
 School
 MBTA AIHA-LAP, LLC

Comments:
 Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client TEB

Received By GL Date 10/19/21 Time 1550

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent information? Client T Analysis T Sampler Name T
Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? _____

Are there Rushes? F Who was notified? _____

Are there Short Holds? F Who was notified? _____

Is there enough Volume? T

Is there Headspace where applicable? NA MS/MSD? F

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? F On COC? F

Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

Tighe&Bond

APPENDIX D



ANALYTICAL REPORT

Lab Number:	L2157218
Client:	White Water Inc. 253B Worcester Road Charlton, MA 01507
ATTN:	Andrew Donnelly
Phone:	(888) 377-7678
Project Name:	PRINCETON TOWN CAMPUS
Project Number:	2241017
Report Date:	11/14/21

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

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com



Project Name: PRINCETON TOWN CAMPUS
Project Number: 2241017

Lab Number: L2157218
Report Date: 11/14/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2157218-01	TC001G FINISHED:WELL #1	DW	6 TOWN HALL DRIVE, PRINCETON, MA 01541	10/18/21 11:00	10/19/21
L2157218-02	TC001G FINISHED:WELL #1- FIELD BLANK	DW	6 TOWN HALL DRIVE, PRINCETON, MA 01541	10/18/21 11:00	10/19/21

Project Name: PRINCETON TOWN CAMPUS
Project Number: 2241017

Lab Number: L2157218
Report Date: 11/14/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: PRINCETON TOWN CAMPUS
Project Number: 2241017

Lab Number: L2157218
Report Date: 11/14/21

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Melissa Sturgis

Title: Technical Director/Representative

Date: 11/14/21

ORGANICS

SEMIVOLATILES

Project Name: PRINCETON TOWN CAMPUS**Lab Number:** L2157218**Project Number:** 2241017**Report Date:** 11/14/21**SAMPLE RESULTS**

Lab ID: L2157218-01
 Client ID: TC001G FINISHED:WELL #1
 Sample Location: 6 TOWN HALL DRIVE, PRINCETON, MA 01541

Date Collected: 10/18/21 11:00
 Date Received: 10/19/21
 Field Prep: Not Specified

Sample Depth:

Matrix: Dw
 Analytical Method: 133,537.1
 Analytical Date: 10/25/21 11:37
 Analyst: LV

Extraction Method: EPA 537.1
 Extraction Date: 10/24/21 17:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	40.1		ng/l	2.00	0.608	1
Perfluorohexanoic Acid (PFHxA)	4.62		ng/l	2.00	0.608	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	2.00	0.608	1
Perfluoroheptanoic Acid (PFHpA)	3.56		ng/l	2.00	0.608	1
Perfluorohexanesulfonic Acid (PFHxS)	249		ng/l	2.00	0.608	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	0.608	1
Perfluorooctanoic Acid (PFOA)	13.1		ng/l	2.00	0.608	1
Perfluorononanoic Acid (PFNA)	0.910	J	ng/l	2.00	0.608	1
Perfluorooctanesulfonic Acid (PFOS)	99.9		ng/l	2.00	0.608	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.608	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	0.608	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.608	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.608	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.608	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.608	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	0.608	1
Perfluorotridecanoic Acid (PFTTrDA)	ND		ng/l	2.00	0.608	1
Perfluorotetradecanoic Acid (PFTTA)	ND		ng/l	2.00	0.608	1
PFAS, Total (6)	366		ng/l	2.00	0.608	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	78		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	70		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	89		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	77		70-130

Project Name: PRINCETON TOWN CAMPUS**Lab Number:** L2157218**Project Number:** 2241017**Report Date:** 11/14/21**SAMPLE RESULTS**

Lab ID: L2157218-02
 Client ID: TC001G FINISHED:WELL #1-FIELD BLANK
 Sample Location: 6 TOWN HALL DRIVE, PRINCETON, MA 01541

Date Collected: 10/18/21 11:00
 Date Received: 10/19/21
 Field Prep: Not Specified

Sample Depth:

Matrix: Dw
 Analytical Method: 133,537.1
 Analytical Date: 10/25/21 11:45
 Analyst: LV

Extraction Method: EPA 537.1
 Extraction Date: 10/24/21 17:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.615	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.615	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	2.00	0.615	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.615	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.615	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	0.615	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.615	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.615	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.615	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.615	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	0.615	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.615	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.615	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.615	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.615	1
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	0.615	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.615	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.615	1
PFAS, Total (6)	ND		ng/l	2.00	0.615	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	83		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	84		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	94		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	88		70-130

Project Name: PRINCETON TOWN CAMPUS
Project Number: 2241017

Lab Number: L2157218
Report Date: 11/14/21

Method Blank Analysis Batch Quality Control

Analytical Method: 133,537.1
Analytical Date: 10/25/21 09:00
Analyst: LV

Extraction Method: EPA 537.1
Extraction Date: 10/24/21 17:10

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab for sample(s): 01-02 Batch: WG1562472-1					
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.668
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.668
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	2.00	0.668
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.668
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.668
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	0.668
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.668
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.668
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.668
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.668
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	0.668
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.668
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.668
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.668
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.668
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	0.668
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.668
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.668
PFAS, Total (6)	ND		ng/l	2.00	0.668

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	81		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	84		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	91		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	96		70-130



Lab Control Sample Analysis

Batch Quality Control

Project Name: PRINCETON TOWN CAMPUS

Lab Number: L2157218

Project Number: 2241017

Report Date: 11/14/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-02 Batch: WG1562472-2								
Perfluorobutanesulfonic Acid (PFBS)	94		-		70-130	-		30
Perfluorohexanoic Acid (PFHxA)	86		-		70-130	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	93		-		70-130	-		30
Perfluoroheptanoic Acid (PFHpA)	99		-		70-130	-		30
Perfluorohexanesulfonic Acid (PFHxS)	95		-		70-130	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	102		-		70-130	-		30
Perfluorooctanoic Acid (PFOA)	97		-		70-130	-		30
Perfluorononanoic Acid (PFNA)	100		-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	96		-		70-130	-		30
Perfluorodecanoic Acid (PFDA)	101		-		70-130	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	92		-		70-130	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	91		-		70-130	-		30
Perfluoroundecanoic Acid (PFUnA)	104		-		70-130	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	99		-		70-130	-		30
Perfluorododecanoic Acid (PFDoA)	102		-		70-130	-		30
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	101		-		70-130	-		30
Perfluorotridecanoic Acid (PFTrDA)	109		-		70-130	-		30
Perfluorotetradecanoic Acid (PFTA)	110		-		70-130	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: PRINCETON TOWN CAMPUS

Project Number: 2241017

Lab Number: L2157218

Report Date: 11/14/21

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
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Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-02 Batch: WG1562472-2

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	86				70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	90				70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	96				70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	92				70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: PRINCETON TOWN CAMPUS

Project Number: 2241017

Lab Number: L2157218

Report Date: 11/14/21

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Sample												
Associated sample(s): 01-02 QC Batch ID: WG1562472-3 QC Sample: L2157074-01 Client ID: MS												
Perfluorobutanesulfonic Acid (PFBS)	0.947J	129	130	101		-	-		70-130	-		30
Perfluorohexanoic Acid (PFHxA)	ND	145	126	87		-	-		70-130	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	145	129	89		-	-		70-130	-		30
Perfluoroheptanoic Acid (PFHpA)	ND	145	142	98		-	-		70-130	-		30
Perfluorohexanesulfonic Acid (PFHxS)	1.49J	133	124	93		-	-		70-130	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	137	141	103		-	-		70-130	-		30
Perfluorooctanoic Acid (PFOA)	ND	145	134	92		-	-		70-130	-		30
Perfluorononanoic Acid (PFNA)	ND	145	138	95		-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	1.20J	135	123	91		-	-		70-130	-		30
Perfluorodecanoic Acid (PFDA)	ND	145	146	100		-	-		70-130	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	135	121	89		-	-		70-130	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	145	126	87		-	-		70-130	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	145	143	98		-	-		70-130	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	145	143	98		-	-		70-130	-		30
Perfluorododecanoic Acid (PFDoA)	ND	145	137	94		-	-		70-130	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	137	133	97		-	-		70-130	-		30
Perfluorotridecanoic Acid (PFTrDA)	ND	145	149	103		-	-		70-130	-		30
Perfluorotetradecanoic Acid (PFTTA)	ND	145	148	102		-	-		70-130	-		30

Matrix Spike Analysis**Batch Quality Control****Project Name:** PRINCETON TOWN CAMPUS**Lab Number:** L2157218**Project Number:** 2241017**Report Date:** 11/14/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
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Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1562472-3 QC Sample: L2157074-01 Client ID: MS Sample

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	86				70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	88				70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	93				70-130
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	88				70-130

Lab Duplicate Analysis

Batch Quality Control

Project Name: PRINCETON TOWN CAMPUS

Project Number: 2241017

Lab Number: L2157218

Report Date: 11/14/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1562472-4 QC Sample: L2157092-01 Client ID: DUP Sample						
Perfluorobutanesulfonic Acid (PFBS)	2.54	2.82	ng/l	10		30
Perfluorohexanoic Acid (PFHxA)	8.92	9.29	ng/l	4		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	6.09	6.29	ng/l	3		30
Perfluorohexanesulfonic Acid (PFHxS)	1.00J	0.976J	ng/l	NC		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	16.4	16.1	ng/l	2		30
Perfluorononanoic Acid (PFNA)	0.680J	0.687J	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	1.75J	1.84J	ng/l	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	ND	ng/l	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	ND	ng/l	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/l	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis

Batch Quality Control

Project Name: PRINCETON TOWN CAMPUS

Project Number: 2241017

Lab Number: L2157218

Report Date: 11/14/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1562472-4 QC Sample: L2157092-01 Client ID: DUP Sample						

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	84		85		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	83		86		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	94		96		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	91		87		70-130

Project Name: PRINCETON TOWN CAMPUS

Project Number: 2241017

Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

Cooler Information**Cooler** **Custody Seal**

A Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2157218-01A	Plastic 250ml Trizma preserved	A	NA		5.5	Y	Absent		A2-MA-537.1(14)
L2157218-01B	Plastic 250ml Trizma preserved	A	NA		5.5	Y	Absent		A2-MA-537.1(14)
L2157218-02A	Plastic 250ml Trizma preserved	A	NA		5.5	Y	Absent		A2-MA-537.1(14)

Project Name: PRINCETON TOWN CAMPUS
Project Number: 2241017

Serial_No:11142108:03
Lab Number: L2157218
Report Date: 11/14/21

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name: PRINCETON TOWN CAMPUS
Project Number: 2241017

Lab Number: L2157218
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GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers



Project Name: PRINCETON TOWN CAMPUS
Project Number: 2241017

Lab Number: L2157218
Report Date: 11/14/21

Footnotes

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

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

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

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

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

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F** - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers



Project Name: PRINCETON TOWN CAMPUS
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Data Qualifiers

- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- V** - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z** - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: PRINCETON TOWN CAMPUS
Project Number: 2241017

Lab Number: L2157218
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REFERENCES

- 133 Determination of Selected Per- and Polyfluorinated Alkyl Substances in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537.1, EPA/600/R-18/352. Version 1.0, November 2018.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D/8270E: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1:**

Ammonia-N, **LCHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E,**

SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.

EPA 624.1: Volatile Halocarbons & Aromatics,

EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II,

Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg.**

EPA 522, EPA 537.1.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

10/19/21

- Initial Monitoring
- Confirmation Sample
- Routine Monitoring
- Other: L2157218

253B Worcester Road, Charlton MA 01507 Phone: (888) 377-7678 Fax: (508) 248-2895

PWS ID #: 2241017 PWS CLASS: TNC JOB/SO #: _____
 PWS NAME: Princeton Town Campus
 PWS ADDRESS: 6 Town Hall Drive, Princeton, MA 01541
 PWS PHONE #: (978) 464 2100 Does this facility have PFAS Treatment?
 YES NO
 DATE COLLECTED: 10/18/21

SPECIAL NOTES:

Drinking Water - PFAS Method 537.1 (Include Sum of PFAS 6)
 Run Field Blank Analysis

PFAS Quarterly per client

OPERATOR QA/QC CHECKLIST

- Sampler has been trained on PFAS sampling protocols.
- Sampler has adhered to PFAS sampling protocols.
- Samples are representative and acceptable for analysis.

LOCATION CODE	SAMPLE LOCATION	SAMPLE TYPE	TIME	PFAS	FIELD BLANK	NOTES:	Total # of Bottles
TC001G	Finished: Well #1	Finish	11:00	✓	✓		4
						Meter: 0313090	
						<i>Joseph C. Burridge 10/19/21</i>	200
						<i>Joseph C. Burridge 10/19/21</i>	2049
						<i>WCT 10/19/21</i>	2049

Custody Transfer	Name & Signature	DATE	TIME
Sampler:	<i>William Hibbs</i>	10/18/21	11:00
Relinquished by:	<i>Wills Hibbs</i>	10/18/21	14:00
Received by:	<i>STORAGE</i>	10/19/21	16:30
Relinquished by:	<i>Rob Macoy STORAGE</i>	10/19/21	16:30
Received by:	<i>Rob Macoy 10.19.21</i>	10/19/21	17:30

10/19/21 17:30

Tighe&Bond

APPENDIX E

TABLE 2 - PFAS Soil Sampling Summary
Princeton, Massachusetts

Parameter	Reportable Concentrations (RCs)	MCP - Method 1 Standards	22 MOUNTAIN ROAD									
	RCS-1	S-1/GW-1	22MTN S-1				22MTN S-2	22MTN S-3		22MTN S-4		
Sampling Date			7/29/2021	7/29/2021	10/27/2021	10/27/2021	7/29/2021	7/29/2021	10/27/2021	7/29/2021	10/27/2021	10/27/2021
Sample Depth (inches)			0-6	0-6 DUP	6-12	12-24	0-6	0-6	6-12	0-6	6-12	12-18
SOP-466 PFAS (µg/kg dry)												
Perfluorobutanoic acid (PFBA)	~	~	0.91	0.72	0.25	0.21	0.6	0.58	0.23	0.48	0.18	ND (0.55)
Perfluorobutanesulfonic acid (PFBS)	~	~	0.4	0.27	ND (0.51)	ND (0.52)	0.6	0.25	0.11	0.086	ND (0.57)	ND (0.55)
Perfluoropentanoic acid (PFPeA)	~	~	0.97	0.71	0.22	0.13	0.38	0.24	0.13	0.29	ND (0.57)	ND (0.55)
Perfluorohexanoic acid (PFHxA)	~	~	3.4	2.3	0.48	0.27	0.48	ND (0.64)	0.15	0.35	ND (0.57)	ND (0.55)
11CI-PF3OJdS (F53B Minor)	~	~	ND (0.53)	ND (0.56)	ND (0.51)	ND (0.52)	ND (0.57)	ND (0.64)	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
9CI-PF3ONS (F53B Major)	~	~	ND (0.53)	ND (0.56)	ND (0.51)	ND (0.52)	ND (0.57)	ND (0.64)	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
4,8-dioxo-3H-perfluorononanoic acid (ADONA)	~	~	ND (0.53)	ND (0.56)	ND (0.51)	ND (0.52)	ND (0.57)	ND (0.64)	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
Hexafluoropropylene oxide dimer acid (HFPO-DA)	~	~	ND (0.53)	ND (0.56)	ND (0.51)	ND (0.52)	ND (0.57)	ND (0.64)	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
8:2 Fluorotelomersulfonic acid (8:2FTS A)	~	~	ND (0.53)	ND (0.56)	ND (0.51)	ND (0.52)	ND (0.57)	ND (0.64)	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
Perfluorododecanoic acid (PFDoA)	~	~	0.09	ND (0.56)	ND (0.51)	ND (0.52)	0.12	ND (0.64)	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	~	~	ND (0.53)	ND (0.56)	ND (0.51)	ND (0.52)	ND (0.57)	ND (0.64)	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
Perfluoroheptanesulfonic acid (PFHpS)	~	~	1.3	0.9	ND (0.51)	ND (0.52)	ND (0.57)	ND (0.64)	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
N-EtFOSAA	~	~	ND (0.53)	ND (0.56)	ND (0.51)	ND (0.52)	ND (0.57)	ND (0.64)	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
N-MeFOSAA	~	~	ND (0.53)	ND (0.56)	ND (0.51)	ND (0.52)	ND (0.57)	ND (0.64)	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
Perfluorotetradecanoic acid (PFTA)	~	~	ND (0.53)	ND (0.56)	ND (0.51)	ND (0.52)	ND (0.57)	ND (0.64)	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
Perfluorotridecanoic acid (PFTDA)	~	~	ND (0.53)	ND (0.56)	ND (0.51)	ND (0.52)	ND (0.57)	ND (0.64)	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
4:2 Fluorotelomersulfonic acid (4:2FTS A)	~	~	ND (0.53)	ND (0.56)	ND (0.51)	ND (0.52)	ND (0.57)	ND (0.64)	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
Perfluorodecanesulfonic acid (PFDS)	~	~	ND (0.53)	ND (0.56)	ND (0.51)	ND (0.52)	ND (0.57)	ND (0.64)	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
Perfluorooctanesulfonamide (FOSA)	~	~	ND (0.53)	ND (0.56)	ND (0.51)	ND (0.52)	ND (0.57)	ND (0.64)	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
Perfluoronanesulfonic acid (PFNS)	~	~	ND (0.53)	ND (0.56)	ND (0.51)	ND (0.52)	ND (0.57)	ND (0.64)	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
Perfluoro-1-hexanesulfonamide (FHxSA)	~	~	0.76	0.6	ND (0.51)	ND (0.52)	ND (0.57)	ND (0.64)	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
Perfluoro-1-butanefulfonamide (FBSA)	~	~	0.24	0.18	ND (0.51)	ND (0.52)	ND (0.57)	ND (0.64)	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
Perfluoro-4-oxapentanoic acid (PFMPA)	~	~	ND (0.53)	ND (0.56)	ND (0.51)	ND (0.52)	ND (0.57)	ND (0.64)	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
Perfluoro-5-oxahexanoic acid (PFMBA)	~	~	ND (0.53)	ND (0.56)	ND (0.51)	ND (0.52)	ND (0.57)	ND (0.64)	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
6:2 Fluorotelomersulfonic acid (6:2FTS A)	~	~	ND (0.53)	ND (0.56)	0.72	0.32	ND (0.57)	ND (0.64)	0.28	ND (0.55)	ND (0.57)	ND (0.55)
Perfluoropentanesulfonic acid (PFPeS)	~	~	0.45	0.3	ND (0.51)	ND (0.52)	0.62	0.24	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
Perfluoroundecanoic acid (PFUnA)	~	~	0.15	0.17	ND (0.51)	ND (0.52)	0.27	0.3	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	~	~	ND (0.53)	ND (0.56)	ND (0.51)	ND (0.52)	ND (0.57)	ND (0.64)	ND (0.68)	ND (0.55)	ND (0.57)	ND (0.55)
Perfluoroheptanoic acid (PFHpA)	0.5	0.5	0.65	0.48	0.21	0.13	0.38	0.31	0.15	0.3	0.088	ND (0.55) *
Perfluorooctanoic acid (PFOA)	0.72	0.72	1.4	0.91	0.45	0.34	1.7	0.71	0.71	1.1	0.36	0.17
Perfluorooctanesulfonic acid (PFOS)	2	2	17	13	4	4.3	3.1	1.7	0.71	0.88	0.54	0.33
Perfluorononanoic acid (PFNA)	0.32	0.32	ND (0.53) *	0.098	ND (0.51) *	0.11	0.68	0.49	0.14	0.19	0.18	0.13
Perfluorodecanoic acid (PFDA)	0.3	0.3	0.16	0.14	ND (0.51) *	ND (0.52) *	0.31	0.26	ND (0.68) *	ND (0.55) *	ND (0.57) *	ND (0.55) *
Perfluorohexanesulfonic acid (PFHxS)	0.3	0.3	14	8.9	2.8	1.3	3.3	1	0.33	0.22	ND (0.57) *	0.13
Total (All Compounds)			41.9	29.7	9.1	7.1	12.5	6.1	2.9	3.9	1.3	0.8
Regulated Total			33.2	23.5	7.5	6.2	9.5	4.5	2.0	2.7	1.2	0.8

NOTES:
 Gray colored cells indicate those compounds that are regulated by MassDEP
 ND = Not detected above the lab reporting limits shown in parentheses.
 ~ indicates that no current standard or RC for those compounds
 Bolded values exceed Method 1 Standard/RCS-1 Value
 An asterisk (*) following a detection limit indicates that the minimum laboratory reporting limit exceeds one or more of the regulatory criteria.

TABLE 2 - PFAS Soil Sampling Summary
Princeton, Massachusetts

Parameter	Reportable Concentrations (RCs)		22 MOUNTAIN ROAD									
	RCS-1	MCP - Method 1 Standards S-1/GW-1	22MTN S-5			22MTN S-6		22MTN S-7		22MTN S-8		
			7/29/2021 0-6	10/27/2021 6-12	10/27/2021 12-18	7/29/2021 0-6	10/27/2021 6-12	7/29/2021 0-6	10/27/2021 6-12	7/29/2021 0-6	10/27/2021 6/12	10/27/2021 12-18
Sampling Date			7/29/2021	10/27/2021	10/27/2021	7/29/2021	10/27/2021	7/29/2021	10/27/2021	7/29/2021	10/27/2021	10/27/2021
Sample Depth (inches)			0-6	6-12	12-18	0-6	6-12	0-6	6-12	0-6	6/12	12-18
SOP-466 PFAS (µg/kg dry)												
Perfluorobutanoic acid (PFBA)	~	~	0.48	ND (0.39)	ND (0.40)	1.3	ND (0.44)	1.3	ND (0.58)	0.59	ND (0.50)	ND (0.51)
Perfluorobutanesulfonic acid (PFBS)	~	~	0.22	ND (0.39)	ND (0.40)	0.66	ND (0.44)	ND (0.62)	0.25	ND (0.49)	ND (0.50)	ND (0.51)
Perfluoropentanoic acid (PFPeA)	~	~	0.2	ND (0.39)	ND (0.40)	0.79	ND (0.44)	0.48	ND (0.58)	0.23	ND (0.50)	ND (0.51)
Perfluorohexanoic acid (PFHxA)	~	~	0.23	ND (0.39)	ND (0.40)	0.85	ND (0.44)	0.43	ND (0.58)	0.26	ND (0.50)	ND (0.51)
11CI-PF3OJDs (F53B Minor)	~	~	ND (0.50)	ND (0.39)	ND (0.40)	ND (0.60)	ND (0.44)	ND (0.62)	ND (0.58)	ND (0.49)	ND (0.50)	ND (0.51)
9CI-PF3ONS (F53B Major)	~	~	ND (0.50)	ND (0.39)	ND (0.40)	ND (0.60)	ND (0.44)	ND (0.62)	ND (0.58)	ND (0.49)	ND (0.50)	ND (0.51)
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	~	~	ND (0.50)	ND (0.39)	ND (0.40)	ND (0.60)	ND (0.44)	ND (0.62)	ND (0.58)	ND (0.49)	ND (0.50)	ND (0.51)
Hexafluoropropylene oxide dimer acid (HFPO-DA)	~	~	ND (0.50)	ND (0.39)	ND (0.40)	ND (0.60)	ND (0.44)	ND (0.62)	ND (0.58)	ND (0.49)	ND (0.50)	ND (0.51)
8:2 Fluorotelomersulfonic acid (8:2FTS A)	~	~	ND (0.50)	ND (0.39)	ND (0.40)	ND (0.60)	ND (0.44)	ND (0.62)	ND (0.58)	ND (0.49)	ND (0.50)	ND (0.51)
Perfluorododecanoic acid (PFDoA)	~	~	ND (0.50)	ND (0.39)	ND (0.40)	ND (0.60)	ND (0.44)	ND (0.62)	ND (0.58)	ND (0.49)	ND (0.50)	ND (0.51)
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	~	~	ND (0.50)	ND (0.39)	ND (0.40)	ND (0.60)	ND (0.44)	ND (0.62)	ND (0.58)	ND (0.49)	ND (0.50)	ND (0.51)
Perfluoroheptanesulfonic acid (PFHpS)	~	~	ND (0.50)	ND (0.39)	ND (0.40)	ND (0.60)	ND (0.44)	ND (0.62)	ND (0.58)	ND (0.49)	ND (0.50)	ND (0.51)
N-EtFOSAA	~	~	ND (0.50)	ND (0.39)	ND (0.40)	ND (0.60)	ND (0.44)	ND (0.62)	ND (0.58)	ND (0.49)	ND (0.50)	ND (0.51)
N-MeFOSAA	~	~	ND (0.50)	ND (0.39)	ND (0.40)	ND (0.60)	ND (0.44)	ND (0.62)	ND (0.58)	ND (0.49)	ND (0.50)	ND (0.51)
Perfluorotetradecanoic acid (PFTA)	~	~	ND (0.50)	ND (0.39)	ND (0.40)	ND (0.60)	ND (0.44)	ND (0.62)	ND (0.58)	ND (0.49)	ND (0.50)	ND (0.51)
Perfluorotridecanoic acid (PFTDA)	~	~	ND (0.50)	ND (0.39)	ND (0.40)	ND (0.60)	ND (0.44)	ND (0.62)	ND (0.58)	ND (0.49)	ND (0.50)	ND (0.51)
4:2 Fluorotelomersulfonic acid (4:2FTS A)	~	~	ND (0.50)	ND (0.39)	ND (0.40)	ND (0.60)	ND (0.44)	ND (0.62)	ND (0.58)	ND (0.49)	ND (0.50)	ND (0.51)
Perfluorodecanesulfonic acid (PFDS)	~	~	ND (0.50)	ND (0.39)	ND (0.40)	ND (0.60)	ND (0.44)	ND (0.62)	ND (0.58)	ND (0.49)	ND (0.50)	ND (0.51)
Perfluorooctanesulfonamide (FOSA)	~	~	ND (0.50)	ND (0.39)	ND (0.40)	ND (0.60)	ND (0.44)	ND (0.62)	ND (0.58)	ND (0.49)	ND (0.50)	ND (0.51)
Perfluoronanesulfonic acid (PFNS)	~	~	ND (0.50)	ND (0.39)	ND (0.40)	ND (0.60)	ND (0.44)	ND (0.62)	ND (0.58)	ND (0.49)	ND (0.50)	ND (0.51)
Perfluoro-1-hexanesulfonamide (FHxSA)	~	~	ND (0.50)	ND (0.39)	ND (0.40)	0.26	ND (0.44)	ND (0.62)	ND (0.58)	ND (0.49)	ND (0.50)	ND (0.51)
Perfluoro-1-butanefulfonamide (FBSA)	~	~	ND (0.50)	ND (0.39)	ND (0.40)	ND (0.60)	ND (0.44)	ND (0.62)	ND (0.58)	ND (0.49)	ND (0.50)	ND (0.51)
Perfluoro-4-oxapentanoic acid (PFMPA)	~	~	ND (0.50)	ND (0.39)	ND (0.40)	ND (0.60)	ND (0.44)	ND (0.62)	ND (0.58)	ND (0.49)	ND (0.50)	ND (0.51)
Perfluoro-5-oxahexanoic acid (PFMBA)	~	~	ND (0.50)	ND (0.39)	ND (0.40)	ND (0.60)	ND (0.44)	ND (0.62)	ND (0.58)	ND (0.49)	ND (0.50)	ND (0.51)
6:2 Fluorotelomersulfonic acid (6:2FTS A)	~	~	ND (0.50)	0.18	0.16	ND (0.60)	ND (0.44)	ND (0.62)	ND (0.58)	ND (0.49)	0.20	ND (0.51)
Perfluoropentanesulfonic acid (PFPeS)	~	~	0.15	ND (0.39)	ND (0.40)	0.82	ND (0.44)	ND (0.62)	0.18	ND (0.49)	ND (0.50)	ND (0.51)
Perfluoroundecanoic acid (PFUnA)	~	~	0.094	ND (0.39)	ND (0.40)	ND (0.60)	ND (0.44)	ND (0.62)	0.19	ND (0.49)	ND (0.50)	ND (0.51)
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	~	~	ND (0.50)	ND (0.39)	ND (0.40)	ND (0.60)	ND (0.44)	ND (0.62)	ND (0.58)	ND (0.49)	ND (0.50)	ND (0.51)
Perfluoroheptanoic acid (PFHpA)	0.5	0.5	0.32	ND (0.39)	ND (0.40)	0.92	0.066	0.62	0.17	0.25	ND (0.50)	ND (0.51) *
Perfluorooctanoic acid (PFOA)	0.72	0.72	1.5	ND (0.39)	ND (0.40)	3.5	0.22	2.6	0.57	0.69	ND (0.50)	0.25
Perfluorooctanesulfonic acid (PFOS)	2	2	1.7	0.12	ND (0.40)	2.6	0.37	1.7	2.1	1.4	ND (0.50)	0.26
Perfluorononanoic acid (PFNA)	0.32	0.32	0.57	ND (0.39) *	ND (0.40) *	0.8	ND (0.44) *	1.1	0.45	0.46	ND (0.50) *	ND (0.51) *
Perfluorodecanoic acid (PFDA)	0.3	0.3	0.15	ND (0.39) *	ND (0.40) *	0.15	ND (0.44) *	0.19	0.23	0.17	ND (0.50) *	ND (0.51) *
Perfluorohexanesulfonic acid (PFHxS)	0.3	0.3	0.63	0.17	0.35	5	0.21	ND (0.62) *	0.33	ND (0.49) *	ND (0.50) *	0.095
Total (All Compounds)			6.2	0.5	0.5	17.7	0.9	8.4	4.5	4.1	0.2	0.6
Regulated Total			4.9	0.3	0.4	13.0	0.9	6.2	3.9	3.0	ND (0.50)	0.6

NOTES:
 Gray colored cells indicate those compounds that are regulated by MassDEP
 ND = Not detected above the lab reporting limits shown in parentheses.
 ~ indicates that no current standard or RC for those compounds
 Bolded values exceed Method 1 Standard/RCS-1 Value
 An asterisk (*) following a detection limit indicates that the minimum laboratory reporting limit is:

TABLE 2 - PFAS Soil Sampling Summary
Princeton, Massachusetts

Parameter	Reportable Concentrations (RCs)	MCP - Method 1 Standards	22 MOUNTAIN ROAD							
	RCS-1	S-1/GW-1	22MTN S-9	22MTN S-10	22MTN S-11	22MTN S-12	22MTN S-13		22MTN Basement-1	22MTN Basement-2
Sampling Date			7/29/2021	10/27/2021	10/27/2021	10/27/2021	10/27/2021	10/27/2021	10/29/2021	10/29/2021
Sample Depth (inches)			0-6	0-6	0-12	0-12	0-12	12-24	0-6	0-6
SOP-466 PFAS (µg/kg dry)										
Perfluorobutanoic acid (PFBA)	~	~	0.67	0.62	0.36	1.4	0.08	0.09	0.087	0.38
Perfluorobutanesulfonic acid (PFBS)	~	~	ND (0.49)	0.12	ND (0.57)	ND (0.77)	ND (0.53)	ND (0.48)	ND (0.43)	0.12
Perfluoropentanoic acid (PFPeA)	~	~	0.13	0.30	0.17	0.50	0.09	ND (0.48)	ND (0.43)	0.29
Perfluorohexanoic acid (PFHxA)	~	~	0.17	0.29	0.17	0.43	ND (0.53)	ND (0.48)	ND (0.43)	ND (0.77)
11CI-PF3OJdS (F53B Minor)	~	~	ND (0.49)	ND (0.68)	ND (0.57)	ND (0.77)	ND (0.53)	ND (0.48)	ND (0.43)	ND (0.77)
9CI-PF3ONS (F53B Major)	~	~	ND (0.49)	ND (0.68)	ND (0.57)	ND (0.77)	ND (0.53)	ND (0.48)	ND (0.43)	ND (0.77)
4,8-dioxo-3H-perfluorononanoic acid (ADONA)	~	~	ND (0.49)	ND (0.68)	ND (0.57)	ND (0.77)	ND (0.53)	ND (0.48)	ND (0.43)	ND (0.77)
Hexafluoropropylene oxide dimer acid (HFPO-DA)	~	~	ND (0.49)	ND (0.68)	ND (0.57)	ND (0.77)	ND (0.53)	ND (0.48)	ND (0.43)	ND (0.77)
8:2 Fluorotelomersulfonic acid (8:2FTS A)	~	~	ND (0.49)	ND (0.68)	ND (0.57)	ND (0.77)	ND (0.53)	ND (0.48)	ND (0.43)	ND (0.77)
Perfluorododecanoic acid (PFDoA)	~	~	ND (0.49)	ND (0.68)	ND (0.57)	0.13	0.11	ND (0.48)	ND (0.43)	0.12
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	~	~	ND (0.49)	ND (0.68)	ND (0.57)	ND (0.77)	ND (0.53)	ND (0.48)	ND (0.43)	ND (0.77)
Perfluoroheptanesulfonic acid (PFHpS)	~	~	ND (0.49)	ND (0.68)	ND (0.57)	ND (0.77)	ND (0.53)	ND (0.48)	ND (0.43)	ND (0.77)
N-EtFOSAA	~	~	ND (0.49)	ND (0.68)	ND (0.57)	ND (0.77)	0.29	ND (0.48)	ND (0.43)	ND (0.77)
N-MeFOSAA	~	~	ND (0.49)	ND (0.68)	ND (0.57)	ND (0.77)	ND (0.53)	ND (0.48)	ND (0.43)	ND (0.77)
Perfluorotetradecanoic acid (PFTA)	~	~	ND (0.49)	ND (0.68)	ND (0.57)	ND (0.77)	ND (0.53)	ND (0.48)	ND (0.43)	ND (0.77)
Perfluorotridecanoic acid (PFTDA)	~	~	ND (0.49)	ND (0.68)	ND (0.57)	ND (0.77)	ND (0.53)	ND (0.48)	ND (0.43)	ND (0.77)
4:2 Fluorotelomersulfonic acid (4:2FTS A)	~	~	ND (0.49)	ND (0.68)	ND (0.57)	ND (0.77)	ND (0.53)	ND (0.48)	ND (0.43)	ND (0.77)
Perfluorodecanesulfonic acid (PFDS)	~	~	0.35	ND (0.68)	ND (0.57)	ND (0.77)	0.13	ND (0.48)	ND (0.43)	ND (0.77)
Perfluorooctanesulfonamide (FOSA)	~	~	ND (0.49)	ND (0.68)	ND (0.57)	ND (0.77)	ND (0.53)	ND (0.48)	ND (0.43)	ND (0.77)
Perfluoronanesulfonic acid (PFNS)	~	~	ND (0.49)	ND (0.68)	ND (0.57)	ND (0.77)	ND (0.53)	ND (0.48)	ND (0.43)	ND (0.77)
Perfluoro-1-hexanesulfonamide (FHxSA)	~	~	ND (0.49)	ND (0.68)	ND (0.57)	ND (0.77)	ND (0.53)	ND (0.48)	ND (0.43)	ND (0.77)
Perfluoro-1-butanefulfonamide (FBSA)	~	~	ND (0.49)	ND (0.68)	ND (0.57)	ND (0.77)	ND (0.53)	ND (0.48)	ND (0.43)	ND (0.77)
Perfluoro-4-oxapentanoic acid (PFMPA)	~	~	ND (0.49)	ND (0.68)	ND (0.57)	ND (0.77)	ND (0.53)	ND (0.48)	ND (0.43)	ND (0.77)
Perfluoro-5-oxahexanoic acid (PFMBA)	~	~	ND (0.49)	ND (0.68)	ND (0.57)	ND (0.77)	ND (0.53)	ND (0.48)	ND (0.43)	ND (0.77)
6:2 Fluorotelomersulfonic acid (6:2FTS A)	~	~	ND (0.49)	ND (0.68)	ND (0.57)	0.25	0.45	ND (0.48)	ND (0.43)	ND (0.77)
Perfluoropentanesulfonic acid (PFPeS)	~	~	ND (0.49)	ND (0.68)	ND (0.57)	ND (0.77)	ND (0.53)	ND (0.48)	ND (0.43)	ND (0.77)
Perfluoroundecanoic acid (PFUnA)	~	~	0.12	ND (0.68)	ND (0.57)	0.22	0.18	ND (0.48)	ND (0.43)	ND (0.77)
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	~	~	ND (0.49)	ND (0.68)	ND (0.57)	ND (0.77)	ND (0.53)	ND (0.48)	ND (0.43)	ND (0.77)
Perfluoroheptanoic acid (PFHpA)	0.5	0.5	0.21	0.29	0.25	0.66	0.13	0.1	ND (0.43)	ND (0.77) *
Perfluorooctanoic acid (PFOA)	0.72	0.72	0.43	0.86	0.91	1.4	0.58	0.64	ND (0.43)	0.6
Perfluorooctanesulfonic acid (PFOS)	2	2	2.0	1.1	1.0	1.7	3.9	0.53	0.4	0.65
Perfluorononanoic acid (PFNA)	0.32	0.32	0.53	0.2	0.25	0.46	0.15	ND (0.48) *	ND (0.43) *	ND (0.77) *
Perfluorodecanoic acid (PFDA)	0.3	0.3	ND (0.49) *	ND (0.68) *	0.11	0.25	0.21	ND (0.48) *	0.09	ND (0.77) *
Perfluorohexanesulfonic acid (PFHxS)	0.3	0.3	ND (0.49) *	0.11	0.16	0.16	ND (0.53) *	0.09	ND (0.43) *	0.13
Total (All Compounds)			4.6	3.9	3.4	7.6	6.3	1.4	0.6	2.3
Regulated Total			3.2	2.6	2.7	4.6	5.0	1.4	0.5	1.4

NOTES:
 Gray colored cells indicate those compounds that are regulated by MassDEP
 ND = Not detected above the lab reporting limits shown in parentheses.
 ~ indicates that no current standard or RC for those compounds
 Bolded values exceed Method 1 Standard/RCS-1 Value
 An asterisk (*) following a detection limit indicates that the minimum laboratory reporting limit is:

TABLE 2 - PFAS Soil Sampling Summary
Princeton, Massachusetts

Parameter	Reportable Concentrations (RCs)	MCP - Method 1 Standards	30 MOUNTAIN ROAD									
	RCS-1	S-1/GW-1	30MTN Basement-1		30MTN Basement-2		30MTN S-1	30MTN S-2		30MTN S-3		
Sampling Date			5/25/2021	10/29/2021	5/25/2021	10/29/2021	5/25/2021	5/25/2021	10/28/2021	5/25/2021	10/28/2021	10/28/2021
Sample Depth (inches)			0-6	6-8	0-6	6-12	0-6	0-6	12-Jun	0-6	6-12	12-24
SOP-466 PFAS (µg/kg dry)												
Perfluorobutanoic acid (PFBA)	~	~	ND (1.2)	ND (0.48)	ND (1.1)	ND (0.77)	ND (0.99)	ND (1.1)	0.3	ND (1.1)	0.25	0.37
Perfluorobutanesulfonic acid (PFBS)	~	~	ND (1.2)	ND (0.48)	ND (1.1)	ND (0.77)	ND (0.99)	ND (1.1)	0.092	ND (1.1)	ND (0.52)	0.16
Perfluoropentanoic acid (PFPeA)	~	~	ND (1.2)	ND (0.48)	ND (1.1)	ND (0.77)	ND (0.99)	ND (1.1)	0.3	ND (1.1)	0.27	0.57
Perfluorohexanoic acid (PFHxA)	~	~	ND (1.2)	ND (0.48)	ND (1.1)	ND (0.77)	ND (0.99)	ND (1.1)	0.63	ND (1.1)	1.2	1.6
11CI-PF3OJdS (F53B Minor)	~	~	ND (1.2)	ND (0.48)	ND (1.1)	ND (0.77)	ND (0.99)	ND (1.1)	ND (0.48)	ND (1.1)	ND (0.52)	ND (0.53)
9CI-PF3ONS (F53B Major)	~	~	ND (1.2)	ND (0.48)	ND (1.1)	ND (0.77)	ND (0.99)	ND (1.1)	ND (0.48)	ND (1.1)	ND (0.52)	ND (0.53)
4,8-dioxo-3H-perfluorononanoic acid (ADONA)	~	~	ND (1.2)	ND (0.48)	ND (1.1)	ND (0.77)	ND (0.99)	ND (1.1)	ND (0.48)	ND (1.1)	ND (0.52)	ND (0.53)
Hexafluoropropylene oxide dimer acid (HFPO-DA)	~	~	ND (2.5)	ND (0.48)	ND (2.1)	ND (0.77)	ND (2.0)	ND (0.48)	ND (2.3)	ND (0.48)	ND (0.52)	ND (0.53)
8:2 Fluorotelomersulfonic acid (8:2FTS A)	~	~	ND (1.2)	ND (0.48)	ND (1.1)	ND (0.77)	ND (0.99)	ND (1.1)	ND (0.48)	ND (1.1)	ND (0.52)	ND (0.53)
Perfluorododecanoic acid (PFDoA)	~	~	ND (1.2)	ND (0.48)	ND (1.1)	0.34	ND (0.99)	ND (1.1)	ND (0.48)	ND (1.1)	ND (0.52)	ND (0.53)
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	~	~	ND (1.2)	ND (0.48)	ND (1.1)	ND (0.77)	ND (0.99)	ND (1.1)	ND (0.48)	ND (1.1)	ND (0.52)	ND (0.53)
Perfluoroheptanesulfonic acid (PFHpS)	~	~	1.7	1.3	ND (1.1)	ND (0.77)	ND (0.99)	ND (1.1)	1.1	ND (1.1)	0.71	2
N-EtFOSAA	~	~	ND (1.2)	ND (0.48)	ND (1.1)	0.33	ND (0.99)	ND (1.1)	ND (0.48)	ND (1.1)	ND (0.52)	ND (0.53)
N-MeFOSAA	~	~	ND (1.2)	ND (0.48)	ND (1.1)	0.85	ND (0.99)	ND (1.1)	ND (0.48)	ND (1.1)	ND (0.52)	ND (0.53)
Perfluorotetradecanoic acid (PFTA)	~	~	ND (1.2)	ND (0.48)	ND (1.1)	0.17	ND (0.99)	ND (1.1)	ND (0.48)	ND (1.1)	ND (0.52)	ND (0.53)
Perfluorotridecanoic acid (PFTDA)	~	~	ND (1.2)	ND (0.48)	ND (1.1)	ND (0.77)	ND (0.99)	ND (1.1)	ND (0.48)	ND (1.1)	ND (0.52)	ND (0.53)
4:2 Fluorotelomersulfonic acid (4:2FTS A)	~	~	ND (1.2)	ND (0.48)	ND (1.1)	ND (0.77)	ND (0.99)	ND (1.1)	ND (0.48)	ND (1.1)	ND (0.52)	ND (0.53)
Perfluorodecanesulfonic acid (PFDS)	~	~	ND (1.2)	ND (0.48)	ND (1.1)	0.8	ND (0.99)	ND (1.1)	ND (0.48)	ND (1.1)	ND (0.52)	ND (0.53)
Perfluorooctanesulfonamide (FOSA)	~	~	ND (1.2)	0.13	ND (1.1)	2.2	ND (0.99)	ND (1.1)	0.14	ND (1.1)	ND (0.52)	ND (0.53)
Perfluoronanesulfonic acid (PFNS)	~	~	ND (1.2)	ND (0.48)	ND (1.1)	ND (0.77)	ND (0.99)	ND (1.1)	1.1	ND (1.1)	ND (0.52)	ND (0.53)
Perfluoro-1-hexanesulfonamide (FHxSA)	~	~	3.2	6.1	2.1	0.27	ND (0.99)	1.9	1.4	ND (1.1)	0.54	0.98
Perfluoro-1-butanedisulfonamide (FBSA)	~	~	ND (1.2)	ND (0.48)	ND (1.1)	ND (0.77)	ND (0.99)	ND (1.1)	ND (0.48)	ND (1.1)	0.19	0.6
Perfluoro-4-oxapentanoic acid (PFMPA)	~	~	ND (1.2)	ND (0.48)	ND (1.1)	ND (0.77)	ND (0.99)	ND (1.1)	ND (0.48)	ND (1.1)	ND (0.52)	ND (0.53)
Perfluoro-5-oxahexanoic acid (PFMBA)	~	~	ND (1.2)	ND (0.48)	ND (1.1)	ND (0.77)	ND (0.99)	ND (1.1)	ND (0.48)	ND (1.1)	ND (0.52)	ND (0.53)
6:2 Fluorotelomersulfonic acid (6:2FTS A)	~	~	ND (1.2)	0.53	ND (1.1)	0.19	ND (0.99)	ND (1.1)	ND (0.48)	ND (1.1)	ND (0.52)	ND (0.53)
Perfluoropentanesulfonic acid (PFPeS)	~	~	ND (1.2)	0.073	ND (1.1)	ND (0.77)	ND (0.99)	ND (1.1)	0.13	ND (1.1)	0.13	0.2
Perfluoroundecanoic acid (PFUnA)	~	~	ND (1.2)	ND (0.48)	ND (1.1)	ND (0.77)	ND (0.99)	ND (1.1)	ND (0.48)	ND (1.1)	ND (0.52)	ND (0.53)
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	~	~	ND (1.2)	ND (0.48)	ND (1.1)	ND (0.77)	ND (0.99)	ND (1.1)	ND (0.48)	ND (1.1)	ND (0.52)	ND (0.53)
Perfluoroheptanoic acid (PFHpA)	0.5	0.5	ND (1.2)	ND (0.48)	ND (1.1)	ND (0.77) *	ND (0.99)	ND (1.1)	0.15	ND (1.1)	0.52	0.56
Perfluorooctanoic acid (PFOA)	0.72	0.72	2.9	0.97	ND (1.1)	ND (0.77) *	ND (0.99)	1.4	0.72	ND (1.1)	1.3	2.1
Perfluorooctanesulfonic acid (PFOS)	2	2	120	170	59	13	1.1	100	130	27	9.2	24
Perfluorononanoic acid (PFNA)	0.32	0.32	ND (1.2)	0.08	ND (1.1)	ND (0.77) *	ND (0.99)	ND (1.1)	ND (0.48) *	ND (1.1)	ND (0.52) *	0.11
Perfluorodecanoic acid (PFDA)	0.3	0.3	ND (1.2)	ND (0.48) *	ND (1.1)	ND (0.77) *	ND (0.99)	ND (1.1)	ND (0.48) *	ND (1.1)	ND (0.52) *	ND (0.53) *
Perfluorohexanesulfonic acid (PFHxS)	0.3	0.3	4.5	2.9	1.6	0.41	ND (0.99)	5.2	4.8	5.6	5.5	9.5
Total (All Compounds)			132.3	182.1	62.7	18.6	1.1	108.5	140.9	32.6	19.8	42.8
Regulated Total			127.4	174.0	60.6	13.4	1.1	106.6	135.7	32.6	16.5	36.3

NOTES:
 Gray colored cells indicate those compounds that are regulated by MassDEP
 ND = Not detected above the lab reporting limits shown in parentheses.
 ~ indicates that no current standard or RC for those compounds
 Bolded values exceed Method 1 Standard/RCS-1 Value
 An asterisk (*) following a detection limit indicates that the minimum laboratory reporting limit is:

TABLE 2 - PFAS Soil Sampling Summary
Princeton, Massachusetts

Parameter	Reportable Concentrations (RCs)	MCP - Method 1 Standards	30 MOUNTAIN ROAD									
	RCS-1	S-1/GW-1	30MTN S-4			30MTN S-5			30MTN S-6	30MTN S-6A	30MTN S-7	30MTN S-8
Sampling Date			5/25/2021	5/25/2021	10/28/2021	5/25/2021	10/28/2021	10/28/2021	5/25/2021	10/29/2021	10/28/2021	10/28/2021
Sample Depth (inches)			0-6	0-6 (DUP)	6-12	0-6	6-12	12-24	0-6	0-12	0-12	0-12
SOP-466 PFAS (µg/kg dry)												
Perfluorobutanoic acid (PFBA)	~	~	ND (1.0)	ND (1.1)	0.22	ND (0.92)	0.25	ND (0.53)	ND (0.97)	1.2	0.33	ND (0.44)
Perfluorobutanesulfonic acid (PFBS)	~	~	ND (1.0)	ND (1.1)	0.13	ND (0.92)	ND (0.50)	0.79	ND (0.97)	0.12	ND (0.49)	ND (0.44)
Perfluoropentanoic acid (PFPeA)	~	~	ND (1.0)	ND (1.1)	0.22	ND (0.92)	0.20	ND (0.53)	ND (0.97)	2.1	0.21	ND (0.44)
Perfluorohexanoic acid (PFHxA)	~	~	ND (1.0)	ND (1.1)	0.6	ND (0.92)	0.52	0.11	ND (0.97)	3.0	0.3	ND (0.44)
11CI-PF3OJdS (F53B Minor)	~	~	ND (1.0)	ND (1.1)	ND (0.60)	ND (0.92)	ND (0.50)	ND (0.53)	ND (0.97)	ND (0.64)	ND (0.49)	ND (0.44)
9CI-PF3ONS (F53B Major)	~	~	ND (1.0)	ND (1.1)	ND (0.60)	ND (0.92)	ND (0.50)	ND (0.53)	ND (0.97)	ND (0.64)	ND (0.49)	ND (0.44)
4,8-dioxo-3H-perfluorononanoic acid (ADONA)	~	~	ND (1.0)	ND (1.1)	ND (0.60)	ND (0.92)	ND (0.50)	ND (0.53)	ND (0.97)	ND (0.64)	ND (0.49)	ND (0.44)
Hexafluoropropylene oxide dimer acid (HFPO-DA)	~	~	ND (2.0)	ND (2.1)	ND (0.60)	ND (1.8)	ND (0.50)	ND (0.53)	ND (1.9)	ND (0.64)	ND (0.49)	ND (0.44)
8:2 Fluorotelomersulfonic acid (8:2FTS A)	~	~	ND (1.0)	ND (1.1)	ND (0.60)	ND (0.92)	ND (0.50)	ND (0.53)	ND (0.97)	ND (0.64)	ND (0.49)	ND (0.44)
Perfluorododecanoic acid (PFDoA)	~	~	ND (1.0)	ND (1.1)	ND (0.60)	ND (0.92)	ND (0.50)	ND (0.53)	ND (0.97)	ND (0.64)	ND (0.49)	ND (0.44)
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	~	~	ND (1.0)	ND (1.1)	ND (0.60)	ND (0.92)	ND (0.50)	ND (0.53)	ND (0.97)	ND (0.64)	ND (0.49)	ND (0.44)
Perfluorooctanesulfonic acid (PFHpS)	~	~	ND (1.0)	ND (1.1)	0.76	ND (0.92)	0.26	ND (0.53)	ND (0.97)	ND (0.64)	ND (0.49)	ND (0.44)
N-EtFOSAA	~	~	ND (1.0)	ND (1.1)	ND (0.60)	ND (0.92)	ND (0.50)	ND (0.53)	ND (0.97)	ND (0.64)	ND (0.49)	ND (0.44)
N-MeFOSAA	~	~	ND (1.0)	ND (1.1)	ND (0.60)	ND (0.92)	ND (0.50)	ND (0.53)	ND (0.97)	ND (0.64)	ND (0.49)	ND (0.44)
Perfluorotetradecanoic acid (PFTA)	~	~	ND (1.0)	ND (1.1)	ND (0.60)	ND (0.92)	ND (0.50)	ND (0.53)	ND (0.97)	ND (0.64)	ND (0.49)	ND (0.44)
Perfluorotridecanoic acid (PFTDA)	~	~	ND (1.0)	ND (1.1)	ND (0.60)	ND (0.92)	ND (0.50)	ND (0.53)	ND (0.97)	ND (0.64)	ND (0.49)	ND (0.44)
4:2 Fluorotelomersulfonic acid (4:2FTS A)	~	~	ND (1.0)	ND (1.1)	ND (0.60)	ND (0.92)	ND (0.50)	ND (0.53)	ND (0.97)	ND (0.64)	ND (0.49)	ND (0.44)
Perfluorodecanesulfonic acid (PFDS)	~	~	ND (1.0)	ND (1.1)	ND (0.60)	ND (0.92)	ND (0.50)	ND (0.53)	ND (0.97)	ND (0.64)	ND (0.49)	ND (0.44)
Perfluorooctanesulfonamide (FOSA)	~	~	ND (1.0)	ND (1.1)	ND (0.60)	ND (0.92)	ND (0.50)	ND (0.53)	ND (0.97)	ND (0.64)	ND (0.49)	ND (0.44)
Perfluoronanesulfonic acid (PFNS)	~	~	ND (1.0)	ND (1.1)	0.38	ND (0.92)	ND (0.50)	ND (0.53)	ND (0.97)	ND (0.64)	ND (0.49)	ND (0.44)
Perfluoro-1-hexanesulfonamide (FHxSA)	~	~	ND (1.0)	ND (1.1)	0.99	ND (0.92)	ND (0.50)	ND (0.53)	ND (0.97)	ND (0.64)	ND (0.49)	0.14
Perfluoro-1-butanefulfonamide (FBSA)	~	~	ND (1.0)	ND (1.1)	ND (0.60)	ND (0.92)	ND (0.50)	ND (0.53)	ND (0.97)	ND (0.64)	ND (0.49)	ND (0.44)
Perfluoro-4-oxapentanoic acid (PFMPA)	~	~	ND (1.0)	ND (1.1)	ND (0.60)	ND (0.92)	ND (0.50)	ND (0.53)	ND (0.97)	ND (0.64)	ND (0.49)	ND (0.44)
Perfluoro-5-oxahexanoic acid (PFMBA)	~	~	ND (1.0)	ND (1.1)	ND (0.60)	ND (0.92)	ND (0.50)	ND (0.53)	ND (0.97)	ND (0.64)	ND (0.49)	ND (0.44)
6:2 Fluorotelomersulfonic acid (6:2FTS A)	~	~	ND (1.0)	ND (1.1)	ND (0.60)	ND (0.92)	ND (0.50)	ND (0.53)	ND (0.97)	ND (0.64)	ND (0.49)	ND (0.44)
Perfluoropentanesulfonic acid (PFPeS)	~	~	ND (1.0)	ND (1.1)	0.13	ND (0.92)	ND (0.50)	0.58	ND (0.97)	ND (0.64)	ND (0.49)	ND (0.44)
Perfluoroundecanoic acid (PFUnA)	~	~	ND (1.0)	ND (1.1)	ND (0.60)	ND (0.92)	ND (0.50)	ND (0.53)	ND (0.97)	ND (0.64)	ND (0.49)	ND (0.44)
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	~	~	ND (1.0)	ND (1.1)	ND (0.60)	ND (0.92)	ND (0.50)	ND (0.53)	ND (0.97)	ND (0.64)	ND (0.49)	ND (0.44)
Perfluoroheptanoic acid (PFHpA)	0.5	0.5	ND (1.0)	ND (1.1)	0.21	ND (0.92)	0.28	0.085	ND (0.97)	0.36	0.28	ND (0.44)
Perfluorooctanoic acid (PFOA)	0.72	0.72	ND (1.0)	ND (1.1)	0.68	ND (0.92)	0.85	0.35	ND (0.97)	1.2	0.92	0.14
Perfluorooctanesulfonic acid (PFOS)	2	2	9.8	11	72	3.5	11	2	ND (0.97)	1.0	2.8	6.1
Perfluorononanoic acid (PFNA)	0.32	0.32	ND (1.0)	ND (1.1)	0.13	ND (0.92)	0.33	ND (0.53) *	ND (0.97)	0.22	0.14	ND (0.44) *
Perfluorodecanoic acid (PFDA)	0.3	0.3	ND (1.0)	ND (1.1)	ND (0.60) *	ND (0.92)	ND (0.50) *	ND (0.53) *	ND (0.97)	0.12	ND (0.49) *	ND (0.44) *
Perfluorohexanesulfonic acid (PFHxS)	0.3	0.3	1.6	2.1	6.7	ND (0.92)	1	1.8	ND (0.97)	0.15	1.2	0.8
Total (All Compounds)			11.4	13.1	83.2	3.5	14.7	5.7	ND (0.97)	9.5	6.2	7.2
Regulated Total			11.4	13.1	79.7	3.5	13.5	4.2	ND (0.97)	3.1	5.3	7.0

NOTES:
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 ND = Not detected above the lab reporting limits shown in parentheses.
 ~ indicates that no current standard or RC for those compounds
 Bolded values exceed Method 1 Standard/RCS-1 Value
 An asterisk (*) following a detection limit indicates that the minimum laboratory reporting limit is:

TABLE 2 - PFAS Soil Sampling Summary
Princeton, Massachusetts

Parameter	Reportable Concentrations (RCs)		30 MOUNTAIN ROAD									
	RCS-1	MCP - Method 1 Standards S-1/GW-1	30MTN S-9	30MTN S-10	30MTN S-11		30MTN S-12		30MTN S-13		30MTN S-14	
Sampling Date			10/28/2021	10/28/2021	10/28/2021	10/28/2021	10/28/2021	10/28/2021	10/28/2021	10/28/2021	10/28/2021	10/28/2021
Sample Depth (inches)			0-12	0-12	0-12	24-36	0-12	12-24	0-12	12-24	0-12	12-24
SOP-466 PFAS (µg/kg dry)												
Perfluorobutanoic acid (PFBA)	~	~	0.18	0.46	0.2	ND (0.41)	ND (0.52)	0.11	0.17	0.078	0.4	0.11
Perfluorobutanesulfonic acid (PFBS)	~	~	0.18	0.12	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	ND (0.55)	0.1	ND (0.51)	0.1
Perfluoropentanoic acid (PFPeA)	~	~	0.17	0.39	0.093	ND (0.41)	ND (0.52)	ND (0.54)	0.1	0.092	0.48	0.16
Perfluorohexanoic acid (PFHxA)	~	~	0.9	0.9	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	0.1	0.3	0.6	0.8
11CI-PF3OJdS (F53B Minor)	~	~	ND (0.52)	ND (0.56)	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	ND (0.55)	ND (0.52)	ND (0.51)	ND (0.50)
9CI-PF3ONS (F53B Major)	~	~	ND (0.52)	ND (0.56)	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	ND (0.55)	ND (0.52)	ND (0.51)	ND (0.50)
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	~	~	ND (0.52)	ND (0.56)	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	ND (0.55)	ND (0.52)	ND (0.51)	ND (0.50)
Hexafluoropropylene oxide dimer acid (HFPO-DA)	~	~	ND (0.52)	ND (0.56)	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	ND (0.55)	ND (0.52)	ND (0.51)	ND (0.50)
8:2 Fluorotelomersulfonic acid (8:2FTS A)	~	~	ND (0.52)	ND (0.56)	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	ND (0.55)	ND (0.52)	ND (0.51)	ND (0.50)
Perfluorododecanoic acid (PFDoA)	~	~	ND (0.52)	ND (0.56)	ND (0.51)	ND (0.41)	0.22	ND (0.54)	ND (0.55)	ND (0.52)	0.13	ND (0.50)
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	~	~	ND (0.52)	ND (0.56)	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	ND (0.55)	ND (0.52)	ND (0.51)	ND (0.50)
Perfluoroheptanesulfonic acid (PFHpS)	~	~	0.82	1.9	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	ND (0.55)	ND (0.52)	ND (0.51)	ND (0.50)
N-EtFOSAA	~	~	ND (0.52)	ND (0.56)	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	ND (0.55)	ND (0.52)	ND (0.51)	ND (0.50)
N-MeFOSAA	~	~	ND (0.52)	ND (0.56)	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	ND (0.55)	ND (0.52)	ND (0.51)	ND (0.50)
Perfluorotetradecanoic acid (PFTA)	~	~	ND (0.52)	ND (0.56)	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	ND (0.55)	ND (0.52)	ND (0.51)	ND (0.50)
Perfluorotridecanoic acid (PFTDA)	~	~	ND (0.52)	ND (0.56)	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	ND (0.55)	ND (0.52)	ND (0.51)	ND (0.50)
4:2 Fluorotelomersulfonic acid (4:2FTS A)	~	~	ND (0.52)	ND (0.56)	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	ND (0.55)	ND (0.52)	ND (0.51)	ND (0.50)
Perfluorodecanesulfonic acid (PFDS)	~	~	ND (0.52)	ND (0.56)	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	ND (0.55)	ND (0.52)	ND (0.51)	ND (0.50)
Perfluorooctanesulfonamide (FOSA)	~	~	ND (0.52)	0.2	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	ND (0.55)	ND (0.52)	ND (0.51)	ND (0.50)
Perfluoronanesulfonic acid (PFNS)	~	~	0.14	1.3	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	ND (0.55)	ND (0.52)	ND (0.51)	ND (0.50)
Perfluoro-1-hexanesulfonamide (FHxSA)	~	~	0.9	2	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	ND (0.55)	ND (0.52)	ND (0.51)	ND (0.50)
Perfluoro-1-butananesulfonamide (FBSA)	~	~	0.2	0.31	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	ND (0.55)	ND (0.52)	ND (0.51)	ND (0.50)
Perfluoro-4-oxapentanoic acid (PFMPA)	~	~	ND (0.52)	ND (0.56)	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	ND (0.55)	ND (0.52)	ND (0.51)	ND (0.50)
Perfluoro-5-oxahexanoic acid (PFMBA)	~	~	ND (0.52)	ND (0.56)	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	ND (0.55)	ND (0.52)	ND (0.51)	ND (0.50)
6:2 Fluorotelomersulfonic acid (6:2FTS A)	~	~	ND (0.52)	ND (0.56)	ND (0.51)	0.14	ND (0.52)	ND (0.54)	ND (0.55)	ND (0.52)	ND (0.51)	ND (0.50)
Perfluoropentanesulfonic acid (PFPeS)	~	~	0.24	0.17	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	ND (0.55)	0.092	ND (0.51)	ND (0.50)
Perfluoroundecanoic acid (PFUnA)	~	~	ND (0.52)	ND (0.56)	ND (0.51)	ND (0.41)	0.43	ND (0.54)	0.12	ND (0.52)	0.12	ND (0.50)
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	~	~	ND (0.52)	ND (0.56)	ND (0.51)	ND (0.41)	ND (0.52)	ND (0.54)	ND (0.55)	ND (0.52)	ND (0.51)	ND (0.50)
Perfluoroheptanoic acid (PFHpA)	0.5	0.5	0.4	0.26	0.099	ND (0.41)	0.084	0.11	0.11	0.14	0.11	0.18
Perfluorooctanoic acid (PFOA)	0.72	0.72	0.93	1.1	0.39	ND (0.41)	0.37	0.69	0.48	0.70	0.46	0.58
Perfluorooctanesulfonic acid (PFOS)	2	2	26.0	110	1	ND (0.41)	6.9	2.3	2.4	2.7	0.8	1.6
Perfluorononanoic acid (PFNA)	0.32	0.32	0.095	0.098	0.22	ND (0.41) *	0.32	0.32	0.32	ND (0.52) *	0.22	0.27
Perfluorodecanoic acid (PFDA)	0.3	0.3	ND (0.52) *	ND (0.56) *	ND (0.51) *	ND (0.41) *	0.66	0.11	0.17	ND (0.52) *	0.27	0.09
Perfluorohexanesulfonic acid (PFHxS)	0.3	0.3	11	7.7	ND (0.51) *	ND (0.41) *	ND (0.52) *	ND (0.54) *	0.33	0.96	ND (0.51) *	ND (0.50) *
Total (All Compounds)			42.2	126.9	2.1	0.1	9.0	3.6	4.3	5.1	3.6	3.9
Regulated Total			38.4	119.2	1.8	ND (0.41)	8.3	3.5	3.8	4.5	1.9	2.7

NOTES:
 Gray colored cells indicate those compounds that are regulated by MassDEP
 ND = Not detected above the lab reporting limits shown in parentheses.
 ~ indicates that no current standard or RC for those compounds
 Bolded values exceed Method 1 Standard/RCS-1 Value
 An asterisk (*) following a detection limit indicates that the minimum laboratory reporting limit is:

TABLE 2 - PFAS Soil Sampling Summary
Princeton, Massachusetts

Parameter	Reportable Concentrations (RCs)	MCP - Method 1 Standards	30 MOUNTAIN ROAD					
	RCS-1	S-1/GW-1	30MTN S-15		30MTN S-16	Soil Pile-1	Soil Pile-2	Mountain Rd Runoff Area
Sampling Date			10/28/2021	10/28/2021	10/28/2021	10/29/2021	10/29/2021	10/29/2021
Sample Depth (inches)						Composite	Composite	0-8
SOP-466 PFAS (µg/kg dry)								
Perfluorobutanoic acid (PFBA)	~	~	0.3	0.11	0.14	ND (0.47)	0.12	ND (0.74)
Perfluorobutanesulfonic acid (PFBS)	~	~	0.11	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	ND (0.74)
Perfluoropentanoic acid (PFPeA)	~	~	0.69	0.28	0.11	ND (0.47)	0.1	0.15
Perfluorohexanoic acid (PFHxA)	~	~	0.5	0.5	0.15	ND (0.47)	ND (0.52)	0.17
11CI-PF3OUds (F53B Minor)	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	ND (0.74)
9CI-PF3ONS (F53B Major)	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	ND (0.74)
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	ND (0.74)
Hexafluoropropylene oxide dimer acid (HFPO-DA)	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	ND (0.74)
8:2 Fluorotelomersulfonic acid (8:2FTS A)	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	ND (0.74)
Perfluorododecanoic acid (PFDoA)	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	0.87
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	ND (0.74)
Perfluoroheptanesulfonic acid (PFHpS)	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	0.41
N-EtFOSAA	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	ND (0.74)
N-MeFOSAA	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	0.22
Perfluorotetradecanoic acid (PFTA)	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	0.19
Perfluorotridecanoic acid (PFTrDA)	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	0.17
4:2 Fluorotelomersulfonic acid (4:2FTS A)	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	ND (0.74)
Perfluorodecanesulfonic acid (PFDS)	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	1.4
Perfluorooctanesulfonamide (FOSA)	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	0.96
Perfluoronanesulfonic acid (PFNS)	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	0.97
Perfluoro-1-hexanesulfonamide (FHxSA)	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	2
Perfluoro-1-butanedisulfonamide (FBSA)	~	~	0.18	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	ND (0.74)
Perfluoro-4-oxapentanoic acid (PFMPA)	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	ND (0.74)
Perfluoro-5-oxahexanoic acid (PFMBA)	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	ND (0.74)
6:2 Fluorotelomersulfonic acid (6:2FTS A)	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	0.25
Perfluoropentanesulfonic acid (PFPeS)	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	0.12
Perfluoroundecanoic acid (PFUnA)	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	0.77
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	~	~	ND (0.51)	ND (0.44)	ND (0.60)	ND (0.47)	ND (0.52)	ND (0.74)
Perfluoroheptanoic acid (PFHpA)	0.5	0.5	0.1	0.091	0.17	ND (0.47)	ND (0.52) *	ND (0.74) *
Perfluorooctanoic acid (PFOA)	0.72	0.72	0.63	0.55	0.76	ND (0.47)	0.46	0.92
Perfluorooctanesulfonic acid (PFOS)	2	2	2.1	1.1	0.9	1.1	5.7	76
Perfluorononanoic acid (PFNA)	0.32	0.32	0.23	0.14	0.13	ND (0.47) *	0.22	0.18
Perfluorodecanoic acid (PFDA)	0.3	0.3	0.16	ND (0.44) *	ND (0.60) *	ND (0.47) *	0.17	0.69
Perfluorohexanesulfonic acid (PFHxS)	0.3	0.3	ND (0.51) *	ND (0.44) *	0.17	ND (0.47) *	0.16	3.4
Total (All Compounds)			5.0	2.7	2.5	1.1	6.9	89.8
Regulated Total			3.2	1.9	2.1	1.1	6.7	81.2

NOTES:
 Gray colored cells indicate those compounds that are regulated by MassDEP
 ND = Not detected above the lab reporting limits shown in parentheses.
 ~ indicates that no current standard or RC for those compounds
 Bolded values exceed Method 1 Standard/RCS-1 Value
 An asterisk (*) following a detection limit indicates that the minimum laboratory reporting limit is:

TABLE 2 - PFAS Soil Sampling Summary
Princeton, Massachusetts

Parameter	Reportable Concentrations (RCs)	MCP - Method 1 Standards	TOWN CAMPUS SAMPLE LOCATIONS					
	RCS-1	S-1/GW-1	Transformer Building S-1	Transformer Building S-2	Transformer Building S-3	Transformer Building S-4	Library-1	Library-2
Sampling Date			8/24/2021	8/24/2021	8/24/2021	8/24/2021	10/29/2021	10/29/2021
Sample Depth (inches)			0-6	0-6	0-6	0-6	0-6	0-6
SOP-466 PFAS ($\mu\text{g}/\text{kg}$ dry)								
Perfluorobutanoic acid (PFBA)	~	~	ND (0.47)	0.28 J	0.18 J	0.10 J	ND (0.51)	0.24
Perfluorobutanesulfonic acid (PFBS)	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	ND (0.50)
Perfluoropentanoic acid (PFPeA)	~	~	ND (0.47)	0.09	ND (0.58)	ND (0.47)	ND (0.51)	0.14
Perfluorohexanoic acid (PFHxA)	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	0.17
11CI-PF3OUdS (F53B Minor)	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	ND (0.50)
9CI-PF3ONS (F53B Major)	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	ND (0.50)
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	ND (0.50)
Hexafluoropropylene oxide dimer acid (HFPO-DA)	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	ND (0.50)
8:2 Fluorotelomersulfonic acid (8:2FTS A)	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	ND (0.50)
Perfluorododecanoic acid (PFDoA)	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	ND (0.50)
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	ND (0.50)
Perfluoroheptanesulfonic acid (PFHpS)	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	ND (0.50)
N-EtFOSAA	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	ND (0.50)
N-MeFOSAA	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	ND (0.50)
Perfluorotetradecanoic acid (PFTA)	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	ND (0.50)
Perfluorotridecanoic acid (PFTrDA)	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	ND (0.50)
4:2 Fluorotelomersulfonic acid (4:2FTS A)	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	ND (0.50)
Perfluorodecanesulfonic acid (PFDS)	~	~	ND (0.47)	ND (0.47)	0.23 J	ND (0.47)	ND (0.51)	ND (0.50)
Perfluorooctanesulfonamide (FOSA)	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	ND (0.50)
Perfluoronanesulfonic acid (PFNS)	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	ND (0.50)
Perfluoro-1-hexanesulfonamide (FHxSA)	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	ND (0.50)
Perfluoro-1-butanefulfonamide (FBSA)	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	ND (0.50)
Perfluoro-4-oxapentanoic acid (PFMPA)	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	ND (0.50)
Perfluoro-5-oxahexanoic acid (PFMBA)	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	ND (0.50)
6:2 Fluorotelomersulfonic acid (6:2FTS A)	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	ND (0.50)
Perfluoropentanesulfonic acid (PFPeS)	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	0.099
Perfluoroundecanoic acid (PFUnA)	~	~	ND (0.47)	0.099 J	0.19 J	ND (0.47)	ND (0.51)	ND (0.50)
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	~	~	ND (0.47)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	ND (0.50)
Perfluoroheptanoic acid (PFHpA)	0.5	0.5	ND (0.47)	ND (0.47)	0.098 J	ND (0.47)	ND (0.51) *	0.18
Perfluorooctanoic acid (PFOA)	0.72	0.72	ND (0.13)	ND (0.47)	ND (0.58)	ND (0.47)	ND (0.51)	0.6
Perfluorooctanesulfonic acid (PFOS)	2	2	ND (0.47)	0.30 J	0.95	0.099 J	0.48	1.3
Perfluorononanoic acid (PFNA)	0.32	0.32	ND (0.08) *	ND (0.08) *	0.17 J	ND (0.07) *	ND (0.51) *	0.22
Perfluorodecanoic acid (PFDA)	0.3	0.3	ND (0.06) *	0.088 J	0.20 J	ND (0.06) *	ND (0.51) *	0.094
Perfluorohexanesulfonic acid (PFHxS)	0.3	0.3	ND (0.08) *	ND (0.08) *	ND (0.09) *	ND (0.07) *	ND (0.51) *	1.2
Total (All Compounds)			ND (0.47)	0.1	1.0	ND (0.47)	0.5	4.2
Regulated Total			ND (0.47)	0.0	1.0	ND (0.47)	0.5	3.6

NOTES:

Gray colored cells indicate those compounds that are regulated by MassDEP

ND = Not detected above the lab reporting limits shown in parentheses.

~ indicates that no current standard or RC for those compounds

Bolded values exceed Method 1 Standard/RCS-1 Value

An asterisk (*) following a detection limit indicates that the minimum laboratory reporting limit is:

TABLE 2 - PFAS Soil Sampling Summary
Princeton, Massachusetts

Parameter	Reportable Concentrations (RCs)	MCP - Method 1 Standards	54 MOUNTAIN ROAD								
	RCS-1	S-1/GW-1	54MTN S-1	54MTN S-2	54MTN S-3	54MTN S-4		54MTN S-5	54MTN S-5A	54MTN S-6	
Sampling Date			8/24/2021	8/24/2021	8/24/2021	8/24/2021	8/24/2021	8/24/2021	10/28/2021	8/24/2021	10/28/2021
Sample Depth (inches)			0-6	0-6	0-6	0-6	0-6 DUP	0-6	0-12	0-6	6-12
SOP-466 PFAS (µg/kg dry)											
Perfluorobutanoic acid (PFBA)	~	~	0.18 J	ND (1.0)	ND (0.48)	0.10 J	0.11 J	0.14 J	ND (0.48)	0.18 J	0.31
Perfluorobutanesulfonic acid (PFBS)	~	~	ND (0.57)	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	ND (0.58)	0.31	ND (0.53)	ND (0.55)
Perfluoropentanoic acid (PFPeA)	~	~	0.21 J	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	0.13 J	0.12	0.26 J	0.57
Perfluorohexanoic acid (PFHxA)	~	~	0.18 J	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	0.12 J	0.15	0.15 J	0.42
11CI-PF3OJDs (F53B Minor)	~	~	ND (0.57)	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	ND (0.58)	ND (0.48)	ND (0.53)	ND (0.55)
9CI-PF3ONS (F53B Major)	~	~	ND (0.57)	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	ND (0.58)	ND (0.48)	ND (0.53)	ND (0.55)
4,8-dioxo-3H-perfluorononanoic acid (ADONA)	~	~	ND (0.57)	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	ND (0.58)	ND (0.48)	ND (0.53)	ND (0.55)
Hexafluoropropylene oxide dimer acid (HFPO-DA)	~	~	ND (0.57)	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	ND (0.58)	ND (0.48)	ND (0.53)	ND (0.55)
8:2 Fluorotelomersulfonic acid (8:2FTS A)	~	~	ND (0.57)	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	ND (0.58)	ND (0.48)	ND (0.53)	ND (0.55)
Perfluorododecanoic acid (PFDoA)	~	~	0.096 J	ND (1.0)	ND (0.48)	0.14 J	0.20 J	0.29 J	ND (0.48)	0.50 J	ND (0.55)
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	~	~	ND (0.57)	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	ND (0.58)	ND (0.48)	ND (0.53)	ND (0.55)
Perfluoroheptanesulfonic acid (PFHpS)	~	~	ND (0.57)	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	ND (0.58)	ND (0.48)	ND (0.53)	ND (0.55)
N-EtFOSAA	~	~	ND (0.57)	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	ND (0.58)	ND (0.48)	ND (0.53)	ND (0.55)
N-MeFOSAA	~	~	ND (0.57)	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	ND (0.58)	ND (0.48)	ND (0.53)	ND (0.55)
Perfluorotetradecanoic acid (PFTA)	~	~	ND (0.57)	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	ND (0.58)	ND (0.48)	0.25 J	ND (0.55)
Perfluorotridecanoic acid (PFTrDA)	~	~	ND (0.57)	ND (1.0)	ND (0.48)	0.19 J	0.27 J	0.16 J	ND (0.48)	0.13 J	ND (0.55)
4:2 Fluorotelomersulfonic acid (4:2FTS A)	~	~	ND (0.57)	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	ND (0.58)	ND (0.48)	ND (0.53)	ND (0.55)
Perfluorodecanesulfonic acid (PFDS)	~	~	ND (0.57)	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	0.24 J	ND (0.48)	0.65	ND (0.55)
Perfluorooctanesulfonamide (FOSA)	~	~	ND (0.57)	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	ND (0.58)	ND (0.48)	ND (0.53)	0.21
Perfluoronanesulfonic acid (PFNS)	~	~	ND (0.57)	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	ND (0.58)	ND (0.48)	ND (0.53)	ND (0.55)
Perfluoro-1-hexanesulfonamide (FHxSA)	~	~	ND (0.57)	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	ND (0.58)	ND (0.48)	ND (0.53)	ND (0.55)
Perfluoro-1-butananesulfonamide (FBSA)	~	~	ND (0.57)	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	ND (0.58)	ND (0.48)	ND (0.53)	ND (0.55)
Perfluoro-4-oxapentanoic acid (PFMPA)	~	~	ND (0.57)	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	ND (0.58)	ND (0.48)	ND (0.53)	ND (0.55)
Perfluoro-5-oxahexanoic acid (PFMBA)	~	~	ND (0.57)	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	ND (0.58)	ND (0.48)	ND (0.53)	ND (0.55)
6:2 Fluorotelomersulfonic acid (6:2FTS A)	~	~	ND (0.57)	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	ND (0.58)	ND (0.48)	ND (0.53)	0.29
Perfluoropentanesulfonic acid (PFPeS)	~	~	ND (0.57)	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	ND (0.58)	ND (0.48)	ND (0.53)	ND (0.55)
Perfluoroundecanoic acid (PFUnA)	~	~	0.14 J	0.22 J	ND (0.48)	0.38 J	0.41 J	0.29 J	ND (0.48)	0.27 J	ND (0.55)
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	~	~	ND (0.57)	ND (1.0)	ND (0.48)	ND (0.55)	ND (0.57)	ND (0.58)	ND (0.48)	ND (0.53)	ND (0.55)
Perfluoroheptanoic acid (PFHpA)	0.5	0.5	0.3 J	ND (0.15)	0.073 J	ND (0.08)	ND (0.08)	0.18 J	0.11	0.17 J	0.69
Perfluorooctanoic acid (PFOA)	0.72	0.72	0.86	ND (0.29)	0.28 J	0.16 J	ND (0.57)	0.51 J	0.23	0.54	1.3
Perfluorooctanesulfonic acid (PFOS)	2	2	1.1	0.73 J	0.33 J	3.1	3.2	4.9	0.71	2.2	1.3
Perfluorononanoic acid (PFNA)	0.32	0.32	0.24 J	ND (0.17)	0.17	0.2 J	0.19 J	0.4 J	ND (0.48) *	0.36 J	0.55
Perfluorodecanoic acid (PFDA)	0.3	0.3	0.2 J	0.18 J	ND (0.06)	0.51 J	0.56 J	0.5 J	0.083	1.1	1.5
Perfluorohexanesulfonic acid (PFHxS)	0.3	0.3	ND (0.09) J	ND (0.16)	ND (0.07)	ND (0.09)	ND (0.09)	ND (0.09)	ND (0.48) *	ND (0.08)	0.15
Total (All Compounds)			2.0	ND (1.0)	0.2	3.1	3.2	4.9	1.7	4.5	19.0
Regulated Total			2.0	ND (1.0)	0.2	3.1	3.2	4.9	1.1	3.8	17.2

NOTES:
 Gray colored cells indicate those compounds that are regulated by MassDEP
 ND = Not detected above the lab reporting limits shown in parentheses.
 ~ indicates that no current standard or RC for those compounds
 Bolded values exceed Method 1 Standard/RCS-1 Value
 An asterisk (*) following a detection limit indicates that the minimum laboratory reporting limit is:

TABLE 2 - PFAS Soil Sampling Summary
Princeton, Massachusetts

Parameter	Reportable Concentrations (RCs)	MCP - Method 1 Standards	54 MOUNTAIN ROAD									
	RCS-1	S-1/GW-1	54MTN S-7			54MTN S-8	54MTN S-9		54MTN S-10		54MTN S-11	
Sampling Date			8/24/2021	10/28/2021	10/28/2021	10/28/2021	10/28/2021	10/28/2021	10/28/2021	10/28/2021	10/28/2021	10/28/2021
Sample Depth (inches)			0-6	6-12	12-24	0-12	0-12	12-24	0-12	12-24	0-12	12-24
SOP-466 PFAS (µg/kg dry)												
Perfluorobutanoic acid (PFBA)	~	~	0.069 J	ND (0.52)	ND (0.45)	0.16	ND (0.48)	ND (0.52)	ND (0.43)	0.47	0.064	ND (0.45)
Perfluorobutanesulfonic acid (PFBS)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
Perfluoropentanoic acid (PFPeA)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	0.76	ND (0.43)	ND (0.45)
Perfluorohexanoic acid (PFHxA)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	0.99	ND (0.43)	ND (0.45)
11CI-PF3OUds (F53B Minor)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
9CI-PF3ONS (F53B Major)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
4,8-dioxo-3H-perfluorononanoic acid (ADONA)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
Hexafluoropropylene oxide dimer acid (HFPO-DA)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
8:2 Fluorotelomersulfonic acid (8:2FTS A)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
Perfluorododecanoic acid (PFDoA)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	0.094	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
Perfluoroheptanesulfonic acid (PFHpS)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
N-EtFOSAA	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
N-MeFOSAA	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
Perfluorotetradecanoic acid (PFTA)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
Perfluorotridecanoic acid (PFTDA)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
4:2 Fluorotelomersulfonic acid (4:2FTS A)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
Perfluorodecanesulfonic acid (PFDS)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
Perfluorooctanesulfonamide (FOSA)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
Perfluoronanesulfonic acid (PFNS)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
Perfluoro-1-hexanesulfonamide (FHxSA)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
Perfluoro-1-butanefulfonamide (FBSA)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
Perfluoro-4-oxapentanoic acid (PFMPA)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
Perfluoro-5-oxahexanoic acid (PFMBA)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
6:2 Fluorotelomersulfonic acid (6:2FTS A)	~	~	ND (0.51)	0.22	ND (0.45)	ND (0.46)	0.18	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	0.16
Perfluoropentanesulfonic acid (PFPeS)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
Perfluoroundecanoic acid (PFUnA)	~	~	0.15 J	ND (0.52)	ND (0.45)	0.19	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	~	~	ND (0.51)	ND (0.52)	ND (0.45)	ND (0.46)	ND (0.48)	ND (0.52)	ND (0.43)	ND (0.50)	ND (0.43)	ND (0.45)
Perfluoroheptanoic acid (PFHpA)	0.5	0.5	ND (0.07)	ND (0.52) *	ND (0.45)	ND (0.46)	0.13	0.093	0.12	1.9	0.063	ND (0.45)
Perfluorooctanoic acid (PFOA)	0.72	0.72	0.18 J	ND (0.52)	ND (0.45)	0.43	0.47	0.39	0.43	5	0.17	ND (0.45)
Perfluorooctanesulfonic acid (PFOS)	2	2	1.1	0.11	ND (0.45)	0.64	1.2	0.29	0.78	2.1	0.17	ND (0.45)
Perfluorononanoic acid (PFNA)	0.32	0.32	0.088 J	ND (0.52) *	ND (0.45) *	0.18	0.13	ND (0.52) *	0.27	0.68	ND (0.43) *	ND (0.45) *
Perfluorodecanoic acid (PFDA)	0.3	0.3	0.29 J	ND (0.52) *	ND (0.45) *	0.2	0.12	ND (0.52) *	0.089	ND (0.50) *	ND (0.43) *	ND (0.45) *
Perfluorohexanesulfonic acid (PFHxS)	0.3	0.3	ND (0.08)	ND (0.52) *	ND (0.45) *	ND (0.46) *	ND (0.48) *	ND (0.52) *	ND (0.43) *	ND (0.50) *	ND (0.43) *	ND (0.45) *
Total (All Compounds)			1.1	0.3	ND (0.45)	1.9	2.2	0.8	1.7	11.9	0.5	0.2
Regulated Total			1.1	0.1	I	1.5	2.1	0.8	1.7	9.7	0.4	ND (0.45)

NOTES:
 Gray colored cells indicate those compounds that are regulated by MassDEP
 ND = Not detected above the lab reporting limits shown in parentheses.
 ~ indicates that no current standard or RC for those compounds
 Bolded values exceed Method 1 Standard/RCS-1 Value
 An asterisk (*) following a detection limit indicates that the minimum laboratory reporting limit is:

TABLE 2 - PFAS Soil Sampling Summary
Princeton, Massachusetts

Parameter	Reportable Concentrations (RCs)	MCP - Method 1 Standards	54 MOUNTAIN ROAD			
	RCS-1	S-1/GW-1	54MTN S-12	54MTN S-13		54MTN S-14
Sampling Date			10/28/2021	10/28/2021	10/28/2021	10/28/2021
Sample Depth (inches)			0-12	0-12	12-24	0-6
SOP-466 PFAS (µg/kg dry)						
Perfluorobutanoic acid (PFBA)	~	~	ND (0.48)	0.19	0.21	0.38
Perfluorobutanesulfonic acid (PFBS)	~	~	ND (0.48)	ND (0.49)	0.11	ND (0.59)
Perfluoropentanoic acid (PFPeA)	~	~	ND (0.48)	0.22	0.25	0.2
Perfluorohexanoic acid (PFHxA)	~	~	ND (0.48)	0.11	0.18	0.29
11CI-PF3OJdS (F53B Minor)	~	~	ND (0.48)	ND (0.49)	ND (0.47)	ND (0.59)
9CI-PF3ONS (F53B Major)	~	~	ND (0.48)	ND (0.49)	ND (0.47)	ND (0.59)
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	~	~	ND (0.48)	ND (0.49)	ND (0.47)	ND (0.59)
Hexafluoropropylene oxide dimer acid (HFPO-DA)	~	~	ND (0.48)	ND (0.49)	ND (0.47)	ND (0.59)
8:2 Fluorotelomersulfonic acid (8:2FTS A)	~	~	ND (0.48)	ND (0.49)	ND (0.47)	ND (0.59)
Perfluorododecanoic acid (PFDoA)	~	~	ND (0.48)	0.13	ND (0.47)	ND (0.59)
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	~	~	ND (0.48)	ND (0.49)	ND (0.47)	ND (0.59)
Perfluoroheptanesulfonic acid (PFHpS)	~	~	ND (0.48)	ND (0.49)	ND (0.47)	ND (0.59)
N-EtFOSAA	~	~	ND (0.48)	ND (0.49)	ND (0.47)	ND (0.59)
N-MeFOSAA	~	~	ND (0.48)	ND (0.49)	ND (0.47)	ND (0.59)
Perfluorotetradecanoic acid (PFTA)	~	~	ND (0.48)	ND (0.49)	ND (0.47)	ND (0.59)
Perfluorotridecanoic acid (PFTDA)	~	~	ND (0.48)	ND (0.49)	ND (0.47)	ND (0.59)
4:2 Fluorotelomersulfonic acid (4:2FTS A)	~	~	ND (0.48)	ND (0.49)	ND (0.47)	ND (0.59)
Perfluorodecanesulfonic acid (PFDS)	~	~	ND (0.48)	ND (0.49)	ND (0.47)	ND (0.59)
Perfluorooctanesulfonamide (FOSA)	~	~	ND (0.48)	ND (0.49)	ND (0.47)	ND (0.59)
Perfluorononanesulfonic acid (PFNS)	~	~	ND (0.48)	ND (0.49)	ND (0.47)	ND (0.59)
Perfluoro-1-hexanesulfonamide (FHxSA)	~	~	ND (0.48)	ND (0.49)	ND (0.47)	ND (0.59)
Perfluoro-1-butanesulfonamide (FBSA)	~	~	ND (0.48)	ND (0.49)	ND (0.47)	ND (0.59)
Perfluoro-4-oxapentanoic acid (PFMPA)	~	~	ND (0.48)	ND (0.49)	ND (0.47)	ND (0.59)
Perfluoro-5-oxahexanoic acid (PFMBA)	~	~	ND (0.48)	ND (0.49)	ND (0.47)	ND (0.59)
6:2 Fluorotelomersulfonic acid (6:2FTS A)	~	~	ND (0.48)	ND (0.49)	ND (0.47)	0.22
Perfluoropentanesulfonic acid (PFPeS)	~	~	ND (0.48)	ND (0.49)	ND (0.47)	ND (0.59)
Perfluoroundecanoic acid (PFUnA)	~	~	ND (0.48)	0.15	ND (0.47)	ND (0.59)
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	~	~	ND (0.48)	ND (0.49)	ND (0.47)	ND (0.59)
Perfluoroheptanoic acid (PFHpA)	0.5	0.5	ND (0.48)	0.12	0.21	0.42
Perfluorooctanoic acid (PFOA)	0.72	0.72	0.34	0.34	0.65	1.8
Perfluorooctanesulfonic acid (PFOS)	2	2	0.19	2.4	2.4	1
Perfluorononanoic acid (PFNA)	0.32	0.32	ND (0.48) *	0.17	0.37	0.3
Perfluorodecanoic acid (PFDA)	0.3	0.3	ND (0.48) *	0.39	0.14	ND (0.59) *
Perfluorohexanesulfonic acid (PFHxS)	0.3	0.3	ND (0.48) *	ND (0.49) *	ND (0.47) *	ND (0.59) *
Total (All Compounds)			0.5	4.2	4.5	4.6
Regulated Total			0.5	3.4	3.8	3.5

NOTES:
 Gray colored cells indicate those compounds that are regulated by MassDEP
 ND = Not detected above the lab reporting limits shown in parentheses.
 ~ indicates that no current standard or RC for those compounds
 Bolded values exceed Method 1 Standard/RCS-1 Value
 An asterisk (*) following a detection limit indicates that the minimum laboratory reporting limit is:

September 20, 2021

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120 Front St.
Worcester, MA 01608-2303

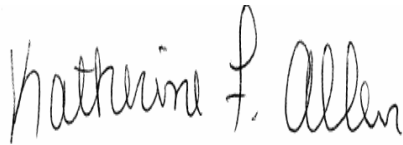
Project Location: 54 Mountain Road, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21H1473

Enclosed are results of analyses for samples received by the laboratory on August 27, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 9/20/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21H1473

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 54 Mountain Road, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
S-1	21H1473-01	Soil		SM 2540G SOP-466 PFAS	
S-2	21H1473-02	Soil		SM 2540G SOP-466 PFAS	
S-3	21H1473-03	Soil		SM 2540G SOP-466 PFAS	
S-4	21H1473-04	Soil		SM 2540G SOP-466 PFAS	
S-4 Dup	21H1473-05	Soil		SM 2540G SOP-466 PFAS	
S-5	21H1473-06	Soil		SM 2540G SOP-466 PFAS	
S-6	21H1473-07	Soil		SM 2540G SOP-466 PFAS	
S-7	21H1473-08	Soil		SM 2540G SOP-466 PFAS	
Eq Blank	21H1473-09	Water		SOP-454 PFAS	
Field Blank	21H1473-10	Water		SOP-454 PFAS	
Rinsate	21H1473-11	Water		SOP-454 PFAS	
Trip Blank	21H1473-12	Water		SOP-454 PFAS	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

REVISION: 9/20/2021 report down to the MDL

SOP-454 PFAS

Qualifications:

Extracted Internal Standard is outside of control limits.

Analyte & Samples(s) Qualified:

d3-NMeFOSAA, d5-NEtFOSAA, M2-4:2FTS, M2-8:2FTS, M2PFTA, M6PFDA, M7PFUnA, M8FOSA, MPFDoA
21H1473-11[Rinsate]

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

9Cl-PF3ONS (F53B Major)
S063215-CCV1

Sample not re-extracted for confirmation due to insufficient sample volume.

Analyte & Samples(s) Qualified:

21H1473-11[Rinsate]

SOP-466 PFAS

Qualifications:

Matrix spike recovery and matrix spike duplicate recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogeneous sample aliquots cannot be eliminated.

Analyte & Samples(s) Qualified:

Perfluorotridecanoic acid (PFTrDA)
B289344-MS1, B289344-MSD1

Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is within method specified criteria.

Analyte & Samples(s) Qualified:

N-MeFOSAA
B289344-MS1

Duplicate analysis confirmed Extracted Internal Standard failure due to matrix effects.

Analyte & Samples(s) Qualified:

d5-NEtFOSAA, M2PFTA
21H1473-04[S-4], 21H1473-05[S-4 Dup], 21H1473-01[S-1], B289344-MS1, B289344-MSD1

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

9Cl-PF3ONS (F53B Major)
S063145-CCV2

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 54 Mountain Road, Princeton, MA

Sample Description:

Work Order: 21H1473

Date Received: 8/27/2021

Field Sample #: S-1

Sampled: 8/24/2021 08:30

Sample ID: 21H1473-01

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.18	0.57	0.076	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.57	0.087	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluoropentanoic acid (PFPeA)	0.21	0.57	0.087	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluorohexanoic acid (PFHxA)	0.18	0.57	0.11	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.57	0.16	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
9Cl-PF3ONS (F53B Major)	ND	0.57	0.14	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.57	0.18	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.57	0.27	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.57	0.15	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluorodecanoic acid (PFDA)	0.20	0.57	0.073	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluorododecanoic acid (PFDoA)	0.096	0.57	0.087	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.57	0.094	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.57	0.17	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
N-EtFOSAA	ND	0.57	0.16	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
N-MeFOSAA	ND	0.57	0.10	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.57	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.57	0.13	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.57	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.57	0.13	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.57	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.57	0.15	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.57	0.17	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.57	0.18	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.57	0.091	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.57	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.57	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.57	0.13	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.57	0.084	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluoroundecanoic acid (PFUnA)	0.14	0.57	0.10	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.57	0.089	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluoroheptanoic acid (PFHpA)	0.30	0.57	0.082	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluorooctanoic acid (PFOA)	0.86	0.57	0.16	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluorooctanesulfonic acid (PFOS)	1.1	0.57	0.077	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH
Perfluorononanoic acid (PFNA)	0.24	0.57	0.094	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:25	BLH



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 54 Mountain Road, Princeton, MA

Sample Description:

Work Order: 21H1473

Date Received: 8/27/2021

Field Sample #: S-1

Sampled: 8/24/2021 08:30

Sample ID: 21H1473-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	68.7		% Wt	1		SM 2540G	9/16/21	9/18/21 12:29	GLH



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Project Location: 54 Mountain Road, Princeton, MA

Sample Description:

Work Order: 21H1473

Date Received: 8/27/2021

Field Sample #: S-2

Sampled: 8/24/2021 08:45

Sample ID: 21H1473-02

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	1.0	0.14	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	1.0	0.16	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluoropentanoic acid (PFPeA)	ND	1.0	0.16	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluorohexanoic acid (PFHxA)	ND	1.0	0.19	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.0	0.29	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
9Cl-PF3ONS (F53B Major)	ND	1.0	0.26	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.0	0.33	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.0	0.49	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.0	0.27	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluorodecanoic acid (PFDA)	0.18	1.0	0.13	µg/kg dry	1	J	SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.0	0.16	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.0	0.17	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.0	0.31	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
N-EtFOSAA	ND	1.0	0.29	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
N-MeFOSAA	ND	1.0	0.19	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.0	0.20	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluorotridecanoic acid (PFTTrDA)	ND	1.0	0.23	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.0	0.19	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	1.0	0.24	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluorooctanesulfonamide (FOSA)	ND	1.0	0.20	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluorononanesulfonic acid (PFNS)	ND	1.0	0.28	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.0	0.31	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.0	0.32	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluorohexanesulfonic acid (PFHxS)	ND	1.0	0.16	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.0	0.19	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.0	0.19	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.0	0.23	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluoropentanesulfonic acid (PFPeS)	ND	1.0	0.15	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluoroundecanoic acid (PFUnA)	0.22	1.0	0.19	µg/kg dry	1	J	SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.0	0.16	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluoroheptanoic acid (PFHpA)	ND	1.0	0.15	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluorooctanoic acid (PFOA)	ND	1.0	0.29	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluorooctanesulfonic acid (PFOS)	0.73	1.0	0.14	µg/kg dry	1	J	SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC
Perfluorononanoic acid (PFNA)	ND	1.0	0.17	µg/kg dry	1		SOP-466 PFAS	9/9/21	9/13/21 21:51	JFC



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Project Location: 54 Mountain Road, Princeton, MA

Sample Description:

Work Order: 21H1473

Date Received: 8/27/2021

Field Sample #: S-2

Sampled: 8/24/2021 08:45

Sample ID: 21H1473-02

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	75.8		% Wt	1		SM 2540G	9/16/21	9/18/21 12:29	GLH



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Project Location: 54 Mountain Road, Princeton, MA

Sample Description:

Work Order: 21H1473

Date Received: 8/27/2021

Field Sample #: S-3

Sampled: 8/24/2021 09:00

Sample ID: 21H1473-03

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.48	0.064	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.48	0.074	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.48	0.074	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.48	0.090	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.48	0.14	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
9Cl-PF3ONS (F53B Major)	ND	0.48	0.12	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.48	0.15	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.48	0.23	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.48	0.13	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluorodecanoic acid (PFDA)	ND	0.48	0.062	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.48	0.074	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.48	0.080	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.48	0.15	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
N-EtFOSAA	ND	0.48	0.14	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
N-MeFOSAA	ND	0.48	0.088	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.48	0.092	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.48	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.48	0.089	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.48	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.48	0.095	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.48	0.13	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.48	0.15	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.48	0.15	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.48	0.077	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.48	0.091	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.48	0.089	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.48	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.48	0.071	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.48	0.088	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.48	0.075	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluoroheptanoic acid (PFHpA)	0.073	0.48	0.070	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluorooctanoic acid (PFOA)	0.28	0.48	0.14	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluorooctanesulfonic acid (PFOS)	0.33	0.48	0.066	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH
Perfluorononanoic acid (PFNA)	0.17	0.48	0.080	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:39	BLH



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 54 Mountain Road, Princeton, MA

Sample Description:

Work Order: 21H1473

Date Received: 8/27/2021

Field Sample #: S-3

Sampled: 8/24/2021 09:00

Sample ID: 21H1473-03

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	82.7		% Wt	1		SM 2540G	9/16/21	9/18/21 12:29	GLH



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 54 Mountain Road, Princeton, MA

Sample Description:

Work Order: 21H1473

Date Received: 8/27/2021

Field Sample #: S-4

Sampled: 8/24/2021 09:15

Sample ID: 21H1473-04

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.10	0.55	0.074	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.55	0.085	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.55	0.085	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.55	0.10	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.55	0.16	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
9Cl-PF3ONS (F53B Major)	ND	0.55	0.14	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.55	0.18	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.55	0.27	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.55	0.14	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluorodecanoic acid (PFDA)	0.51	0.55	0.071	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluorododecanoic acid (PFDoA)	0.14	0.55	0.085	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.55	0.091	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.55	0.17	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
N-EtFOSAA	ND	0.55	0.16	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
N-MeFOSAA	ND	0.55	0.10	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.55	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluorotridecanoic acid (PFTrDA)	0.19	0.55	0.12	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.55	0.10	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.55	0.13	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.55	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.55	0.15	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.55	0.17	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluoro-1-butananesulfonamide (FBSA)	ND	0.55	0.18	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.55	0.089	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.55	0.10	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.55	0.10	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.55	0.13	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.55	0.081	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluoroundecanoic acid (PFUnA)	0.38	0.55	0.10	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.55	0.086	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.55	0.080	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluorooctanoic acid (PFOA)	0.16	0.55	0.16	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluorooctanesulfonic acid (PFOS)	3.1	0.55	0.075	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH
Perfluorononanoic acid (PFNA)	0.20	0.55	0.091	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:46	BLH



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 54 Mountain Road, Princeton, MA

Sample Description:

Work Order: 21H1473

Date Received: 8/27/2021

Field Sample #: S-4

Sampled: 8/24/2021 09:15

Sample ID: 21H1473-04

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	70.4		% Wt	1		SM 2540G	9/16/21	9/18/21 12:29	GLH



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 54 Mountain Road, Princeton, MA

Sample Description:

Work Order: 21H1473

Date Received: 8/27/2021

Field Sample #: S-4 Dup

Sampled: 8/24/2021 09:15

Sample ID: 21H1473-05

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.11	0.57	0.076	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.57	0.087	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.57	0.087	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.57	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.57	0.16	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
9Cl-PF3ONS (F53B Major)	ND	0.57	0.14	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.57	0.18	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.57	0.28	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.57	0.15	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluorodecanoic acid (PFDA)	0.56	0.57	0.074	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluorododecanoic acid (PFDoA)	0.20	0.57	0.087	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.57	0.094	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.57	0.17	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
N-EtFOSAA	ND	0.57	0.16	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
N-MeFOSAA	ND	0.57	0.10	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.57	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluorotridecanoic acid (PFTrDA)	0.27	0.57	0.13	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.57	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.57	0.13	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.57	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.57	0.15	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.57	0.17	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.57	0.18	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.57	0.091	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.57	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.57	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.57	0.13	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.57	0.084	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluoroundecanoic acid (PFUnA)	0.41	0.57	0.10	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.57	0.089	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.57	0.082	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluorooctanoic acid (PFOA)	ND	0.57	0.16	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluorooctanesulfonic acid (PFOS)	3.2	0.57	0.077	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH
Perfluorononanoic acid (PFNA)	0.19	0.57	0.094	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 14:53	BLH



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 54 Mountain Road, Princeton, MA

Sample Description:

Work Order: 21H1473

Date Received: 8/27/2021

Sampled: 8/24/2021 09:15

Field Sample #: S-4 Dup

Sample ID: 21H1473-05

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	67.0		% Wt	1		SM 2540G	9/16/21	9/18/21 12:29	GLH



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 54 Mountain Road, Princeton, MA

Sample Description:

Work Order: 21H1473

Date Received: 8/27/2021

Field Sample #: S-5

Sampled: 8/24/2021 09:30

Sample ID: 21H1473-06

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.14	0.58	0.077	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.58	0.089	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluoropentanoic acid (PFPeA)	0.13	0.58	0.089	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluorohexanoic acid (PFHxA)	0.12	0.58	0.11	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.58	0.16	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
9Cl-PF3ONS (F53B Major)	ND	0.58	0.15	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.58	0.19	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.58	0.28	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.58	0.15	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluorodecanoic acid (PFDA)	0.50	0.58	0.075	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluorododecanoic acid (PFDoA)	0.29	0.58	0.089	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.58	0.095	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.58	0.17	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
N-EtFOSAA	ND	0.58	0.16	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
N-MeFOSAA	ND	0.58	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.58	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluorotridecanoic acid (PFTrDA)	0.16	0.58	0.13	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.58	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluorodecanesulfonic acid (PFDS)	0.24	0.58	0.14	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.58	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.58	0.16	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.58	0.17	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluoro-1-butananesulfonamide (FBSA)	ND	0.58	0.18	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.58	0.093	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.58	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.58	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.58	0.13	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.58	0.085	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluoroundecanoic acid (PFUnA)	0.29	0.58	0.11	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.58	0.090	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluoroheptanoic acid (PFHpA)	0.18	0.58	0.084	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluorooctanoic acid (PFOA)	0.51	0.58	0.16	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluorooctanesulfonic acid (PFOS)	4.9	0.58	0.078	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH
Perfluorononanoic acid (PFNA)	0.40	0.58	0.095	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:01	BLH



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 54 Mountain Road, Princeton, MA

Sample Description:

Work Order: 21H1473

Date Received: 8/27/2021

Field Sample #: S-5

Sampled: 8/24/2021 09:30

Sample ID: 21H1473-06

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	68.4		% Wt	1		SM 2540G	9/16/21	9/18/21 12:29	GLH



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 54 Mountain Road, Princeton, MA

Sample Description:

Work Order: 21H1473

Date Received: 8/27/2021

Field Sample #: S-6

Sampled: 8/24/2021 09:45

Sample ID: 21H1473-07

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.18	0.53	0.071	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.53	0.082	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluoropentanoic acid (PFPeA)	0.26	0.53	0.082	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluorohexanoic acid (PFHxA)	0.15	0.53	0.10	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.53	0.15	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
9Cl-PF3ONS (F53B Major)	ND	0.53	0.13	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.53	0.17	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.53	0.26	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.53	0.14	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluorodecanoic acid (PFDA)	1.1	0.53	0.069	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluorododecanoic acid (PFDoA)	0.50	0.53	0.082	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.53	0.088	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.53	0.16	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
N-EtFOSAA	ND	0.53	0.15	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
N-MeFOSAA	ND	0.53	0.097	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluorotetradecanoic acid (PFTA)	0.25	0.53	0.10	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluorotridecanoic acid (PFTrDA)	0.13	0.53	0.12	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.53	0.098	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluorodecanesulfonic acid (PFDS)	0.65	0.53	0.12	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.53	0.10	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.53	0.14	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.53	0.16	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluoro-1-butananesulfonamide (FBSA)	ND	0.53	0.17	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.53	0.085	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.53	0.10	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.53	0.098	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.53	0.12	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.53	0.078	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluoroundecanoic acid (PFUnA)	0.27	0.53	0.097	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.53	0.083	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluoroheptanoic acid (PFHpA)	0.17	0.53	0.077	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluorooctanoic acid (PFOA)	0.54	0.53	0.15	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluorooctanesulfonic acid (PFOS)	2.2	0.53	0.072	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH
Perfluorononanoic acid (PFNA)	0.36	0.53	0.088	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:08	BLH



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 54 Mountain Road, Princeton, MA

Sample Description:

Work Order: 21H1473

Date Received: 8/27/2021

Field Sample #: S-6

Sampled: 8/24/2021 09:45

Sample ID: 21H1473-07

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	72.9		% Wt	1		SM 2540G	9/16/21	9/18/21 12:29	GLH



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 54 Mountain Road, Princeton, MA

Sample Description:

Work Order: 21H1473

Date Received: 8/27/2021

Field Sample #: S-7

Sampled: 8/24/2021 10:00

Sample ID: 21H1473-08

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.069	0.51	0.068	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.51	0.078	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.51	0.078	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.51	0.096	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.51	0.14	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
9Cl-PF3ONS (F53B Major)	ND	0.51	0.13	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.51	0.16	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.51	0.25	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.51	0.13	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluorodecanoic acid (PFDA)	0.29	0.51	0.066	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluorododecanoic acid (PFDoA)	0.12	0.51	0.078	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.51	0.084	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.51	0.15	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
N-EtFOSAA	ND	0.51	0.14	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
N-MeFOSAA	ND	0.51	0.093	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.51	0.098	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.51	0.11	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.51	0.094	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.51	0.12	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.51	0.10	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.51	0.14	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.51	0.15	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluoro-1-butananesulfonamide (FBSA)	ND	0.51	0.16	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.51	0.082	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.51	0.097	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.51	0.094	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.51	0.12	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.51	0.075	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluoroundecanoic acid (PFUnA)	0.15	0.51	0.093	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.51	0.080	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.51	0.074	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluorooctanoic acid (PFOA)	0.18	0.51	0.15	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluorooctanesulfonic acid (PFOS)	1.1	0.51	0.069	µg/kg dry	1		SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH
Perfluorononanoic acid (PFNA)	0.088	0.51	0.084	µg/kg dry	1	J	SOP-466 PFAS	9/7/21	9/9/21 15:15	BLH



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 54 Mountain Road, Princeton, MA

Sample Description:

Work Order: 21H1473

Date Received: 8/27/2021

Field Sample #: S-7

Sampled: 8/24/2021 10:00

Sample ID: 21H1473-08

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	75.2		% Wt	1		SM 2540G	9/16/21	9/18/21 12:30	GLH



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 54 Mountain Road, Princeton, MA

Sample Description:

Work Order: 21H1473

Date Received: 8/27/2021

Field Sample #: Eq Blank

Sampled: 8/24/2021 09:20

Sample ID: 21H1473-09

Sample Matrix: Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	2.0	0.76	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluoropentanoic acid (PFPeA)	ND	2.0	0.40	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluorohexanoic acid (PFHxA)	ND	2.0	0.39	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
11Cl-PF3OUdS (F53B Minor)	ND	2.0	0.66	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
9Cl-PF3ONS (F53B Major)	ND	2.0	0.40	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	0.25	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	0.62	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.50	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.45	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.24	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
N-EtFOSAA	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
N-MeFOSAA	ND	2.0	0.78	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluorotridecanoic acid (PFTTrDA)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.33	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.43	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.17	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.32	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.20	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	0.35	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.43	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.35	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluoropentanesulfonic acid (PFPeS)	ND	2.0	0.26	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluoroheptanoic acid (PFHpA)	ND	2.0	0.35	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluorooctanoic acid (PFOA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	0.62	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC
Perfluorononanoic acid (PFNA)	ND	2.0	0.35	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:46	JFC



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 54 Mountain Road, Princeton, MA

Sample Description:

Work Order: 21H1473

Date Received: 8/27/2021

Field Sample #: Field Blank

Sampled: 8/24/2021 09:20

Sample ID: 21H1473-10

Sample Matrix: Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	1.9	0.70	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluoropentanoic acid (PFPeA)	ND	1.9	0.37	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluorohexanoic acid (PFHxA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.61	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9	0.37	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	0.23	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.57	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluorodecanoic acid (PFDA)	ND	1.9	0.46	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.42	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.89	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
N-EtFOSAA	ND	1.9	0.60	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
N-MeFOSAA	ND	1.9	0.72	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.31	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.40	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	0.29	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	0.18	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.39	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluoropentanesulfonic acid (PFPeS)	ND	1.9	0.24	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluoroheptanoic acid (PFHpA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluorooctanoic acid (PFOA)	ND	1.9	0.64	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	0.57	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC
Perfluorononanoic acid (PFNA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:17	JFC



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 54 Mountain Road, Princeton, MA

Sample Description:

Work Order: 21H1473

Date Received: 8/27/2021

Field Sample #: Rinsate

Sampled: 8/24/2021 08:00

Sample ID: 21H1473-11

Sample Matrix: Water

Sample Flags: Z-01

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	1.9	0.73	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluoropentanoic acid (PFPeA)	ND	1.9	0.38	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluorohexanoic acid (PFHxA)	ND	1.9	0.38	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.63	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9	0.38	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	0.23	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.59	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluorodecanoic acid (PFDA)	ND	1.9	0.48	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.43	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	0.23	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.92	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
N-EtFOSAA	ND	1.9	0.61	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
N-MeFOSAA	ND	1.9	0.74	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	0.30	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	0.19	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluoropentanesulfonic acid (PFPeS)	ND	1.9	0.25	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluoroheptanoic acid (PFHpA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluorooctanoic acid (PFOA)	ND	1.9	0.66	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	0.59	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC
Perfluorononanoic acid (PFNA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/3/21	9/13/21 15:53	JFC



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 54 Mountain Road, Princeton, MA

Sample Description:

Work Order: 21H1473

Date Received: 8/27/2021

Field Sample #: Trip Blank

Sampled: 8/24/2021 00:00

Sample ID: 21H1473-12

Sample Matrix: Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	1.9	0.73	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluoropentanoic acid (PFPeA)	ND	1.9	0.38	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluorohexanoic acid (PFHxA)	ND	1.9	0.38	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.63	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9	0.38	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	0.23	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.59	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluorodecanoic acid (PFDA)	ND	1.9	0.48	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.43	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	0.23	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.92	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
N-EtFOSAA	ND	1.9	0.61	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
N-MeFOSAA	ND	1.9	0.74	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	0.30	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	0.19	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluoropentanesulfonic acid (PFPeS)	ND	1.9	0.25	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluoroheptanoic acid (PFHpA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluorooctanoic acid (PFOA)	ND	1.9	0.66	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	0.59	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC
Perfluorononanoic acid (PFNA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/3/21	9/10/21 18:24	JFC



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Sample Extraction Data

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
21H1473-01 [S-1]	B290378	09/16/21
21H1473-02 [S-2]	B290378	09/16/21
21H1473-03 [S-3]	B290378	09/16/21
21H1473-04 [S-4]	B290378	09/16/21
21H1473-05 [S-4 Dup]	B290378	09/16/21
21H1473-06 [S-5]	B290378	09/16/21
21H1473-07 [S-6]	B290378	09/16/21
21H1473-08 [S-7]	B290378	09/16/21

Prep Method: SOP 454-PFAAS-SOP-454 PFAS

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21H1473-09 [Eq Blank]	B289650	244	1.00	09/03/21
21H1473-10 [Field Blank]	B289650	265	1.00	09/03/21
21H1473-11 [Rinsate]	B289650	257	1.00	09/03/21
21H1473-12 [Trip Blank]	B289650	257	1.00	09/03/21

Prep Method: SOP 465-PFAAS-SOP-466 PFAS

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21H1473-01 [S-1]	B289344	5.75	5.00	09/07/21
21H1473-03 [S-3]	B289344	5.63	5.00	09/07/21
21H1473-04 [S-4]	B289344	5.77	5.00	09/07/21
21H1473-05 [S-4 Dup]	B289344	5.88	5.00	09/07/21
21H1473-06 [S-5]	B289344	5.68	5.00	09/07/21
21H1473-07 [S-6]	B289344	5.79	5.00	09/07/21
21H1473-08 [S-7]	B289344	5.85	5.00	09/07/21

Prep Method: SOP 465-PFAAS-SOP-466 PFAS

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21H1473-02RE1 [S-2]	B289928	2.91	5.00	09/09/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B289344 - SOP 465-PFAAS

Blank (B289344-BLK1)

Prepared: 09/07/21 Analyzed: 09/09/21

Perfluorobutanoic acid (PFBA)	ND	0.38	µg/kg wet							
Perfluorobutanesulfonic acid (PFBS)	ND	0.38	µg/kg wet							
Perfluoropentanoic acid (PFPeA)	ND	0.38	µg/kg wet							
Perfluorohexanoic acid (PFHxA)	ND	0.38	µg/kg wet							
11Cl-PF3OUdS (F53B Minor)	ND	0.38	µg/kg wet							
9Cl-PF3ONS (F53B Major)	ND	0.38	µg/kg wet							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.38	µg/kg wet							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.38	µg/kg wet							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.38	µg/kg wet							
Perfluorodecanoic acid (PFDA)	ND	0.38	µg/kg wet							
Perfluorododecanoic acid (PFDoA)	ND	0.38	µg/kg wet							
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.38	µg/kg wet							
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.38	µg/kg wet							
N-EtFOSAA	ND	0.38	µg/kg wet							
N-MeFOSAA	ND	0.38	µg/kg wet							
Perfluorotetradecanoic acid (PFTA)	ND	0.38	µg/kg wet							
Perfluorotridecanoic acid (PFTrDA)	ND	0.38	µg/kg wet							
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.38	µg/kg wet							
Perfluorodecanesulfonic acid (PFDS)	ND	0.38	µg/kg wet							
Perfluorooctanesulfonamide (FOSA)	ND	0.38	µg/kg wet							
Perfluorononanesulfonic acid (PFNS)	ND	0.38	µg/kg wet							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.38	µg/kg wet							
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.38	µg/kg wet							
Perfluorohexanesulfonic acid (PFHxS)	ND	0.38	µg/kg wet							
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.38	µg/kg wet							
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.38	µg/kg wet							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.38	µg/kg wet							
Perfluoropentanesulfonic acid (PFPeS)	ND	0.38	µg/kg wet							
Perfluoroundecanoic acid (PFUnA)	ND	0.38	µg/kg wet							
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.38	µg/kg wet							
Perfluoroheptanoic acid (PFHpA)	ND	0.38	µg/kg wet							
Perfluorooctanoic acid (PFOA)	ND	0.38	µg/kg wet							
Perfluorooctanesulfonic acid (PFOS)	ND	0.38	µg/kg wet							
Perfluorononanoic acid (PFNA)	ND	0.38	µg/kg wet							

LCS (B289344-BS1)

Prepared: 09/07/21 Analyzed: 09/09/21

Perfluorobutanoic acid (PFBA)	2.27	0.39	µg/kg wet	2.19	104	71-135
Perfluorobutanesulfonic acid (PFBS)	1.98	0.39	µg/kg wet	1.93	103	72-128
Perfluoropentanoic acid (PFPeA)	2.20	0.39	µg/kg wet	2.19	101	69-132
Perfluorohexanoic acid (PFHxA)	2.25	0.39	µg/kg wet	2.19	103	70-132
11Cl-PF3OUdS (F53B Minor)	2.13	0.39	µg/kg wet	2.06	103	50-150
9Cl-PF3ONS (F53B Major)	2.35	0.39	µg/kg wet	2.04	115	50-150
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	2.04	0.39	µg/kg wet	2.06	98.9	50-150
Hexafluoropropylene oxide dimer acid (HFPO-DA)	2.01	0.39	µg/kg wet	2.19	92.1	50-150
8:2 Fluorotelomersulfonic acid (8:2FTS A)	2.17	0.39	µg/kg wet	2.10	103	65-137
Perfluorodecanoic acid (PFDA)	2.26	0.39	µg/kg wet	2.19	104	69-133
Perfluorododecanoic acid (PFDoA)	2.27	0.39	µg/kg wet	2.19	104	69-135
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	1.70	0.39	µg/kg wet	1.95	87.1	50-150

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B289344 - SOP 465-PFAAS

LCS (B289344-BS1)

Prepared: 09/07/21 Analyzed: 09/09/21

Perfluoroheptanesulfonic acid (PFHpS)	1.89	0.39	µg/kg wet	2.09		90.4	70-132			
N-EtFOSAA	2.60	0.39	µg/kg wet	2.19		119	61-139			
N-MeFOSAA	2.70	0.39	µg/kg wet	2.19		124	63-144			
Perfluorotetradecanoic acid (PFTA)	2.10	0.39	µg/kg wet	2.19		96.1	69-133			
Perfluorotridecanoic acid (PFTrDA)	2.20	0.39	µg/kg wet	2.19		100	66-139			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.22	0.39	µg/kg wet	2.05		108	62-145			
Perfluorodecanesulfonic acid (PFDS)	2.41	0.39	µg/kg wet	2.11		114	59-134			
Perfluorooctanesulfonamide (FOSA)	2.32	0.39	µg/kg wet	2.19		106	67-137			
Perfluorononanesulfonic acid (PFNS)	2.22	0.39	µg/kg wet	2.10		106	69-125			
Perfluoro-1-hexanesulfonamide (FHxSA)	2.22	0.39	µg/kg wet	2.19		102	50-150			
Perfluoro-1-butanefulfonamide (FBSA)	2.43	0.39	µg/kg wet	2.19		111	50-150			
Perfluorohexanesulfonic acid (PFHxS)	2.08	0.39	µg/kg wet	1.99		104	67-130			
Perfluoro-4-oxapentanoic acid (PFMPA)	2.17	0.39	µg/kg wet	2.19		99.4	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	2.06	0.39	µg/kg wet	2.19		94.2	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.26	0.39	µg/kg wet	2.08		109	64-140			
Perfluoropentanesulfonic acid (PFPeS)	2.05	0.39	µg/kg wet	2.06		99.8	73-123			
Perfluoroundecanoic acid (PFUnA)	2.25	0.39	µg/kg wet	2.19		103	64-136			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	1.92	0.39	µg/kg wet	2.19		87.8	50-150			
Perfluoroheptanoic acid (PFHpA)	2.24	0.39	µg/kg wet	2.19		102	71-131			
Perfluorooctanoic acid (PFOA)	2.23	0.39	µg/kg wet	2.19		102	69-133			
Perfluorooctanesulfonic acid (PFOS)	2.13	0.39	µg/kg wet	2.02		105	68-136			
Perfluorononanoic acid (PFNA)	2.21	0.39	µg/kg wet	2.19		101	72-129			

Matrix Spike (B289344-MS1)

Source: 21H1473-01

Prepared: 09/07/21 Analyzed: 09/09/21

Perfluorobutanoic acid (PFBA)	3.52	0.57	µg/kg dry	3.15	0.182	106	71-135			
Perfluorobutanesulfonic acid (PFBS)	3.03	0.57	µg/kg dry	2.79	ND	109	72-128			
Perfluoropentanoic acid (PFPeA)	3.46	0.57	µg/kg dry	3.15	0.212	103	69-132			
Perfluorohexanoic acid (PFHxA)	3.45	0.57	µg/kg dry	3.15	0.177	104	70-132			
11Cl-PF3OUdS (F53B Minor)	2.71	0.57	µg/kg dry	2.97	ND	91.2	50-150			
9Cl-PF3ONS (F53B Major)	3.22	0.57	µg/kg dry	2.94	ND	110	50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	3.11	0.57	µg/kg dry	2.97	ND	105	50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	2.97	0.57	µg/kg dry	3.15	ND	94.4	50-150			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	3.11	0.57	µg/kg dry	3.02	ND	103	65-137			
Perfluorodecanoic acid (PFDA)	3.51	0.57	µg/kg dry	3.15	0.201	105	69-133			
Perfluorododecanoic acid (PFDoA)	3.16	0.57	µg/kg dry	3.15	0.0959	97.1	69-135			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	2.50	0.57	µg/kg dry	2.80	ND	89.3	50-150			
Perfluoroheptanesulfonic acid (PFHpS)	3.24	0.57	µg/kg dry	3.01	ND	108	70-132			
N-EtFOSAA	3.53	0.57	µg/kg dry	3.15	ND	112	61-139			
N-MeFOSAA	4.77	0.57	µg/kg dry	3.15	ND	152 *	63-144			MS-22
Perfluorotetradecanoic acid (PFTA)	3.09	0.57	µg/kg dry	3.15	ND	97.9	69-133			
Perfluorotridecanoic acid (PFTrDA)	4.78	0.57	µg/kg dry	3.15	ND	152 *	66-139			MS-12
4:2 Fluorotelomersulfonic acid (4:2FTS A)	3.15	0.57	µg/kg dry	2.95	ND	107	62-145			
Perfluorodecanesulfonic acid (PFDS)	3.15	0.57	µg/kg dry	3.04	ND	104	59-134			
Perfluorooctanesulfonamide (FOSA)	3.26	0.57	µg/kg dry	3.15	ND	104	67-137			
Perfluorononanesulfonic acid (PFNS)	2.78	0.57	µg/kg dry	3.02	ND	92.0	69-125			
Perfluoro-1-hexanesulfonamide (FHxSA)	3.41	0.57	µg/kg dry	3.15	ND	108	50-150			
Perfluoro-1-butanefulfonamide (FBSA)	3.81	0.57	µg/kg dry	3.15	ND	121	50-150			
Perfluorohexanesulfonic acid (PFHxS)	3.24	0.57	µg/kg dry	2.87	ND	113	67-130			
Perfluoro-4-oxapentanoic acid (PFMPA)	3.18	0.57	µg/kg dry	3.15	ND	101	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	3.06	0.57	µg/kg dry	3.15	ND	97.2	50-150			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B289344 - SOP 465-PFAAS										
Matrix Spike (B289344-MS1)										
		Source: 21H1473-01			Prepared: 09/07/21 Analyzed: 09/09/21					
6:2 Fluorotelomersulfonic acid (6:2FTS A)	3.37	0.57	µg/kg dry	2.99	ND	112	64-140			
Perfluoropetanesulfonic acid (PFPeS)	3.04	0.57	µg/kg dry	2.96	ND	103	73-123			
Perfluoroundecanoic acid (PFUnA)	3.35	0.57	µg/kg dry	3.15	0.143	102	64-136			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.87	0.57	µg/kg dry	3.15	ND	91.2	50-150			
Perfluoroheptanoic acid (PFHpA)	3.56	0.57	µg/kg dry	3.15	0.300	103	71-131			
Perfluorooctanoic acid (PFOA)	4.22	0.57	µg/kg dry	3.15	0.856	107	69-133			
Perfluorooctanesulfonic acid (PFOS)	4.37	0.57	µg/kg dry	2.91	1.15	111	68-136			
Perfluorononanoic acid (PFNA)	3.35	0.57	µg/kg dry	3.15	0.239	98.8	72-129			
Matrix Spike Dup (B289344-MSD1)										
		Source: 21H1473-01			Prepared: 09/07/21 Analyzed: 09/09/21					
Perfluorobutanoic acid (PFBA)	3.83	0.59	µg/kg dry	3.27	0.182	112	71-135	8.26	30	
Perfluorobutanesulfonic acid (PFBS)	3.37	0.59	µg/kg dry	2.89	ND	117	72-128	10.4	30	
Perfluoropentanoic acid (PFPeA)	3.76	0.59	µg/kg dry	3.27	0.212	109	69-132	8.50	30	
Perfluorohexanoic acid (PFHxA)	3.79	0.59	µg/kg dry	3.27	0.177	111	70-132	9.46	30	
11Cl-PF3OUdS (F53B Minor)	3.13	0.59	µg/kg dry	3.08	ND	102	50-150	14.5	30	
9Cl-PF3ONS (F53B Major)	3.63	0.59	µg/kg dry	3.04	ND	119	50-150	12.1	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	3.42	0.59	µg/kg dry	3.08	ND	111	50-150	9.71	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	2.87	0.59	µg/kg dry	3.27	ND	87.9	50-150	3.55	30	
8:2 Fluorotelomersulfonic acid (8:2FTS A)	3.38	0.59	µg/kg dry	3.14	ND	108	65-137	8.37	30	
Perfluorodecanoic acid (PFDA)	4.26	0.59	µg/kg dry	3.27	0.201	124	69-133	19.4	30	
Perfluorododecanoic acid (PFDoA)	4.04	0.59	µg/kg dry	3.27	0.0959	121	69-135	24.6	30	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	2.77	0.59	µg/kg dry	2.91	ND	95.2	50-150	9.98	30	
Perfluoroheptanesulfonic acid (PFHpS)	3.30	0.59	µg/kg dry	3.12	ND	106	70-132	1.96	30	
N-EtFOSAA	4.02	0.59	µg/kg dry	3.27	ND	123	61-139	13.0	30	
N-MeFOSAA	4.40	0.59	µg/kg dry	3.27	ND	135	63-144	8.06	30	
Perfluorotetradecanoic acid (PFTA)	3.23	0.59	µg/kg dry	3.27	ND	98.9	69-133	4.59	30	
Perfluorotridecanoic acid (PFTrDA)	5.06	0.59	µg/kg dry	3.27	ND	155	* 66-139	5.67	30	MS-12
4:2 Fluorotelomersulfonic acid (4:2FTS A)	3.33	0.59	µg/kg dry	3.06	ND	109	62-145	5.59	30	
Perfluorodecanesulfonic acid (PFDS)	3.32	0.59	µg/kg dry	3.15	ND	105	59-134	5.14	30	
Perfluorooctanesulfonamide (FOSA)	3.76	0.59	µg/kg dry	3.27	ND	115	67-137	14.2	30	
Perfluoronanesulfonic acid (PFNS)	3.31	0.59	µg/kg dry	3.14	ND	105	69-125	17.2	30	
Perfluoro-1-hexanesulfonamide (FHxSA)	4.12	0.59	µg/kg dry	3.27	ND	126	50-150	19.0	30	
Perfluoro-1-butanesulfonamide (FBSA)	4.17	0.59	µg/kg dry	3.27	ND	128	50-150	8.81	30	
Perfluorohexanesulfonic acid (PFHxS)	3.31	0.59	µg/kg dry	2.97	ND	111	67-130	1.96	30	
Perfluoro-4-oxapentanoic acid (PFMPA)	3.52	0.59	µg/kg dry	3.27	ND	108	50-150	10.0	30	
Perfluoro-5-oxahexanoic acid (PFMBA)	3.37	0.59	µg/kg dry	3.27	ND	103	50-150	9.41	30	
6:2 Fluorotelomersulfonic acid (6:2FTS A)	3.56	0.59	µg/kg dry	3.10	ND	115	64-140	5.73	30	
Perfluoropetanesulfonic acid (PFPeS)	3.20	0.59	µg/kg dry	3.07	ND	104	73-123	5.10	30	
Perfluoroundecanoic acid (PFUnA)	3.79	0.59	µg/kg dry	3.27	0.143	112	64-136	12.3	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	3.15	0.59	µg/kg dry	3.27	ND	96.4	50-150	9.11	30	
Perfluoroheptanoic acid (PFHpA)	3.98	0.59	µg/kg dry	3.27	0.300	113	71-131	11.3	30	
Perfluorooctanoic acid (PFOA)	4.62	0.59	µg/kg dry	3.27	0.856	115	69-133	8.96	30	
Perfluorooctanesulfonic acid (PFOS)	4.65	0.59	µg/kg dry	3.02	1.15	116	68-136	6.03	30	
Perfluorononanoic acid (PFNA)	3.98	0.59	µg/kg dry	3.27	0.239	115	72-129	17.1	30	

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B289650 - SOP 454-PFAAS

Blank (B289650-BLK1)

Prepared: 09/03/21 Analyzed: 09/10/21

Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L
Perfluoropentanoic acid (PFPeA)	ND	2.0	ng/L
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L
11Cl-PF3OUdS (F53B Minor)	ND	2.0	ng/L
9Cl-PF3ONS (F53B Major)	ND	2.0	ng/L
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	ng/L
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	ng/L
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	ng/L
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	2.0	ng/L
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L
N-EtFOSAA	ND	2.0	ng/L
N-MeFOSAA	ND	2.0	ng/L
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	ng/L
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L
Perfluorononanesulfonic acid (PFNS)	ND	2.0	ng/L
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	ng/L
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	ng/L
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	ng/L
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	ng/L
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	ng/L
Perfluoropentanesulfonic acid (PFPeS)	ND	2.0	ng/L
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	ng/L
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L
Perfluorooctanoic acid (PFOA)	ND	2.0	ng/L
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L

LCS (B289650-BS1)

Prepared: 09/03/21 Analyzed: 09/10/21

Perfluorobutanoic acid (PFBA)	10.3	2.0	ng/L	9.81	105	73-129
Perfluorobutanesulfonic acid (PFBS)	9.01	2.0	ng/L	8.68	104	72-130
Perfluoropentanoic acid (PFPeA)	9.80	2.0	ng/L	9.81	99.9	72-129
Perfluorohexanoic acid (PFHxA)	9.95	2.0	ng/L	9.81	101	72-129
11Cl-PF3OUdS (F53B Minor)	7.89	2.0	ng/L	9.24	85.4	50-150
9Cl-PF3ONS (F53B Major)	10.9	2.0	ng/L	9.14	119	50-150
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	9.15	2.0	ng/L	9.24	99.1	50-150
Hexafluoropropylene oxide dimer acid (HFPO-DA)	7.69	2.0	ng/L	9.81	78.5	50-150
8:2 Fluorotelomersulfonic acid (8:2FTS A)	8.19	2.0	ng/L	9.41	87.0	67-138
Perfluorodecanoic acid (PFDA)	10.0	2.0	ng/L	9.81	102	71-129
Perfluorododecanoic acid (PFDoA)	9.82	2.0	ng/L	9.81	100	72-134
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	7.71	2.0	ng/L	8.73	88.3	50-150

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B289650 - SOP 454-PFAAS

LCS (B289650-BS1)

Prepared: 09/03/21 Analyzed: 09/10/21

Perfluoroheptanesulfonic acid (PFHpS)	10.4	2.0	ng/L	9.36		111	69-134			
N-EtFOSAA	11.5	2.0	ng/L	9.81		117	61-135			
N-MeFOSAA	12.1	2.0	ng/L	9.81		124	65-136			
Perfluorotetradecanoic acid (PFTA)	9.08	2.0	ng/L	9.81		92.6	71-132			
Perfluorotridecanoic acid (PFTTrDA)	9.33	2.0	ng/L	9.81		95.1	65-144			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	9.69	2.0	ng/L	9.17		106	63-143			
Perfluorodecanesulfonic acid (PFDS)	9.84	2.0	ng/L	9.46		104	53-142			
Perfluorooctanesulfonamide (FOSA)	11.1	2.0	ng/L	9.81		113	67-137			
Perfluorononanesulfonic acid (PFNS)	9.64	2.0	ng/L	9.41		102	69-127			
Perfluoro-1-hexanesulfonamide (FHxSA)	10.1	2.0	ng/L	9.81		103	50-150			
Perfluoro-1-butanefulfonamide (FBSA)	11.2	2.0	ng/L	9.81		114	50-150			
Perfluorohexanesulfonic acid (PFHxS)	9.39	2.0	ng/L	8.92		105	68-131			
Perfluoro-4-oxapentanoic acid (PFMPA)	8.86	2.0	ng/L	9.81		90.4	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	8.91	2.0	ng/L	9.81		90.9	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	9.76	2.0	ng/L	9.31		105	64-140			
Perfluoropentanesulfonic acid (PFPeS)	8.97	2.0	ng/L	9.22		97.3	71-127			
Perfluoroundecanoic acid (PFUnA)	10.1	2.0	ng/L	9.81		103	69-133			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	8.40	2.0	ng/L	9.81		85.6	50-150			
Perfluoroheptanoic acid (PFHpA)	9.95	2.0	ng/L	9.81		101	72-130			
Perfluorooctanoic acid (PFOA)	9.43	2.0	ng/L	9.81		96.1	71-133			
Perfluorooctanesulfonic acid (PFOS)	10.1	2.0	ng/L	9.07		111	65-140			
Perfluorononanoic acid (PFNA)	9.99	2.0	ng/L	9.81		102	69-130			

LCS Dup (B289650-BS1)

Prepared: 09/03/21 Analyzed: 09/10/21

Perfluorobutanoic acid (PFBA)	10.2	2.0	ng/L	9.87		103	73-129	1.11	30	
Perfluorobutanesulfonic acid (PFBS)	9.41	2.0	ng/L	8.73		108	72-130	4.33	30	
Perfluoropentanoic acid (PFPeA)	10.3	2.0	ng/L	9.87		105	72-129	5.11	30	
Perfluorohexanoic acid (PFHxA)	10.5	2.0	ng/L	9.87		106	72-129	5.10	30	
11Cl-PF3OUdS (F53B Minor)	8.39	2.0	ng/L	9.30		90.2	50-150	6.14	30	
9Cl-PF3ONS (F53B Major)	10.8	2.0	ng/L	9.20		118	50-150	0.743	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	9.84	2.0	ng/L	9.30		106	50-150	7.27	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	9.22	2.0	ng/L	9.87		93.4	50-150	18.0	30	
8:2 Fluorotelomersulfonic acid (8:2FTS A)	9.26	2.0	ng/L	9.47		97.8	67-138	12.2	30	
Perfluorodecanoic acid (PFDA)	10.7	2.0	ng/L	9.87		108	71-129	6.03	30	
Perfluorododecanoic acid (PFDoA)	9.71	2.0	ng/L	9.87		98.4	72-134	1.14	30	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	8.25	2.0	ng/L	8.78		93.9	50-150	6.76	30	
Perfluoroheptanesulfonic acid (PFHpS)	11.0	2.0	ng/L	9.42		117	69-134	5.35	30	
N-EtFOSAA	11.6	2.0	ng/L	9.87		117	61-135	0.906	30	
N-MeFOSAA	12.2	2.0	ng/L	9.87		124	65-136	0.866	30	
Perfluorotetradecanoic acid (PFTA)	9.73	2.0	ng/L	9.87		98.6	71-132	6.91	30	
Perfluorotridecanoic acid (PFTTrDA)	9.43	2.0	ng/L	9.87		95.6	65-144	1.13	30	
4:2 Fluorotelomersulfonic acid (4:2FTS A)	10.5	2.0	ng/L	9.23		114	63-143	7.85	30	
Perfluorodecanesulfonic acid (PFDS)	10.4	2.0	ng/L	9.52		110	53-142	5.97	30	
Perfluorooctanesulfonamide (FOSA)	10.7	2.0	ng/L	9.87		108	67-137	3.61	30	
Perfluorononanesulfonic acid (PFNS)	9.77	2.0	ng/L	9.47		103	69-127	1.33	30	
Perfluoro-1-hexanesulfonamide (FHxSA)	9.90	2.0	ng/L	9.87		100	50-150	1.89	30	
Perfluoro-1-butanefulfonamide (FBSA)	11.6	2.0	ng/L	9.87		118	50-150	3.61	30	
Perfluorohexanesulfonic acid (PFHxS)	8.95	2.0	ng/L	8.98		99.7	68-131	4.78	30	
Perfluoro-4-oxapentanoic acid (PFMPA)	8.99	2.0	ng/L	9.87		91.1	50-150	1.47	30	
Perfluoro-5-oxahexanoic acid (PFMBA)	9.37	2.0	ng/L	9.87		95.0	50-150	5.04	30	

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B289650 - SOP 454-PFAAS

LCS Dup (B289650-BSD1)

Prepared: 09/03/21 Analyzed: 09/10/21

6:2 Fluorotelomersulfonic acid (6:2FTS A)	10.6	2.0	ng/L	9.37		113	64-140	8.08	30	
Perfluoropetanesulfonic acid (PFPeS)	9.04	2.0	ng/L	9.28		97.5	71-127	0.822	30	
Perfluoroundecanoic acid (PFUnA)	11.0	2.0	ng/L	9.87		112	69-133	9.34	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	8.78	2.0	ng/L	9.87		89.0	50-150	4.49	30	
Perfluoroheptanoic acid (PFHpA)	10.2	2.0	ng/L	9.87		104	72-130	2.83	30	
Perfluorooctanoic acid (PFOA)	10.4	2.0	ng/L	9.87		105	71-133	9.50	30	
Perfluorooctanesulfonic acid (PFOS)	10.4	2.0	ng/L	9.13		114	65-140	2.59	30	
Perfluorononanoic acid (PFNA)	9.66	2.0	ng/L	9.87		97.9	69-130	3.43	30	

Batch B289928 - SOP 465-PFAAS

Blank (B289928-BLK1)

Prepared: 09/09/21 Analyzed: 09/13/21

Perfluorobutanoic acid (PFBA)	ND	0.38	µg/kg wet							
Perfluorobutanesulfonic acid (PFBS)	ND	0.38	µg/kg wet							
Perfluoropentanoic acid (PFPeA)	ND	0.38	µg/kg wet							
Perfluorohexanoic acid (PFHxA)	ND	0.38	µg/kg wet							
11Cl-PF3OUdS (F53B Minor)	ND	0.38	µg/kg wet							
9Cl-PF3ONS (F53B Major)	ND	0.38	µg/kg wet							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.38	µg/kg wet							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.38	µg/kg wet							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.38	µg/kg wet							
Perfluorodecanoic acid (PFDA)	ND	0.38	µg/kg wet							
Perfluorododecanoic acid (PFDoA)	ND	0.38	µg/kg wet							
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.38	µg/kg wet							
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.38	µg/kg wet							
N-EtFOSAA	ND	0.38	µg/kg wet							
N-MeFOSAA	ND	0.38	µg/kg wet							
Perfluorotetradecanoic acid (PFTA)	ND	0.38	µg/kg wet							
Perfluorotridecanoic acid (PFTrDA)	ND	0.38	µg/kg wet							
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.38	µg/kg wet							
Perfluorodecanesulfonic acid (PFDS)	ND	0.38	µg/kg wet							
Perfluorooctanesulfonamide (FOSA)	ND	0.38	µg/kg wet							
Perfluoronanesulfonic acid (PFNS)	ND	0.38	µg/kg wet							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.38	µg/kg wet							
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.38	µg/kg wet							
Perfluorohexanesulfonic acid (PFHxS)	ND	0.38	µg/kg wet							
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.38	µg/kg wet							
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.38	µg/kg wet							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.38	µg/kg wet							
Perfluoropetanesulfonic acid (PFPeS)	ND	0.38	µg/kg wet							
Perfluoroundecanoic acid (PFUnA)	ND	0.38	µg/kg wet							
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.38	µg/kg wet							
Perfluoroheptanoic acid (PFHpA)	ND	0.38	µg/kg wet							
Perfluorooctanoic acid (PFOA)	ND	0.38	µg/kg wet							
Perfluorooctanesulfonic acid (PFOS)	ND	0.38	µg/kg wet							
Perfluorononanoic acid (PFNA)	ND	0.38	µg/kg wet							

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B289928 - SOP 465-PFAAS										
LCS (B289928-BS1)										
Prepared: 09/09/21 Analyzed: 09/13/21										
Perfluorobutanoic acid (PFBA)	1.83	0.39	µg/kg wet	2.19		83.8	71-135			
Perfluorobutanesulfonic acid (PFBS)	1.67	0.39	µg/kg wet	1.93		86.5	72-128			
Perfluoropentanoic acid (PFPeA)	1.83	0.39	µg/kg wet	2.19		83.5	69-132			
Perfluorohexanoic acid (PFHxA)	1.82	0.39	µg/kg wet	2.19		83.2	70-132			
11Cl-PF3OUdS (F53B Minor)	1.89	0.39	µg/kg wet	2.06		91.4	50-150			
9Cl-PF3ONS (F53B Major)	1.99	0.39	µg/kg wet	2.04		97.4	50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	1.75	0.39	µg/kg wet	2.06		84.8	50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	1.90	0.39	µg/kg wet	2.19		87.0	50-150			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	1.74	0.39	µg/kg wet	2.10		82.8	65-137			
Perfluorodecanoic acid (PFDA)	1.94	0.39	µg/kg wet	2.19		88.7	69-133			
Perfluorododecanoic acid (PFDoA)	1.69	0.39	µg/kg wet	2.19		77.0	69-135			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	1.43	0.39	µg/kg wet	1.95		73.4	50-150			
Perfluoroheptanesulfonic acid (PFHpS)	1.91	0.39	µg/kg wet	2.09		91.5	70-132			
N-EtFOSAA	2.33	0.39	µg/kg wet	2.19		107	61-139			
N-MeFOSAA	2.09	0.39	µg/kg wet	2.19		95.7	63-144			
Perfluorotetradecanoic acid (PFTA)	1.65	0.39	µg/kg wet	2.19		75.5	69-133			
Perfluorotridecanoic acid (PFTrDA)	2.04	0.39	µg/kg wet	2.19		93.2	66-139			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	1.80	0.39	µg/kg wet	2.05		87.8	62-145			
Perfluorodecanesulfonic acid (PFDS)	1.92	0.39	µg/kg wet	2.11		91.0	59-134			
Perfluorooctanesulfonamide (FOSA)	1.84	0.39	µg/kg wet	2.19		84.2	67-137			
Perfluorononanesulfonic acid (PFNS)	1.92	0.39	µg/kg wet	2.10		91.4	69-125			
Perfluoro-1-hexanesulfonamide (FHxSA)	1.73	0.39	µg/kg wet	2.19		79.1	50-150			
Perfluoro-1-butanesulfonamide (FBSA)	1.86	0.39	µg/kg wet	2.19		85.0	50-150			
Perfluorohexanesulfonic acid (PFHxS)	1.69	0.39	µg/kg wet	1.99		84.6	67-130			
Perfluoro-4-oxapentanoic acid (PFMPA)	1.68	0.39	µg/kg wet	2.19		76.8	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	1.72	0.39	µg/kg wet	2.19		78.5	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	1.84	0.39	µg/kg wet	2.08		88.3	64-140			
Perfluoropentanesulfonic acid (PFPeS)	1.81	0.39	µg/kg wet	2.06		87.8	73-123			
Perfluoroundecanoic acid (PFUnA)	1.74	0.39	µg/kg wet	2.19		79.4	64-136			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	1.70	0.39	µg/kg wet	2.19		77.8	50-150			
Perfluoroheptanoic acid (PFHpA)	1.83	0.39	µg/kg wet	2.19		83.7	71-131			
Perfluorooctanoic acid (PFOA)	1.82	0.39	µg/kg wet	2.19		83.2	69-133			
Perfluorooctanesulfonic acid (PFOS)	1.82	0.39	µg/kg wet	2.02		90.1	68-136			
Perfluorononanoic acid (PFNA)	1.70	0.39	µg/kg wet	2.19		77.9	72-129			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
MS-12	Matrix spike recovery and matrix spike duplicate recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogeneous sample aliquots cannot be eliminated.
MS-22	Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is within method specified criteria.
PF-18	Duplicate analysis confirmed Extracted Internal Standard failure due to matrix effects.
S-29	Extracted Internal Standard is outside of control limits.
V-20	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side.
Z-01	Data validation is not affected since sample result was "not detected" for this compound. Sample not re-extracted for confirmation due to insufficient sample volume.

ANALYST

RAP	Raisa A. Petraitis
JFC	James F. Constantino
JLH	Jessica L. Hoffman
GLH	Gabrielle L Howe
EGR	Evet G Rivera
DRL	Daniel R Letendre
BLM	Brianna Henriquez

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Initial Cal Check (S062905-ICV1)			Lab File ID: ICV1.d			Analyzed: 08/31/21 13:44			
M8FOSA	304994	4.02055	330569.3	4.02055	92	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	199090.5	2.5543	223527.9	2.5461	89	50 - 150	0.0082	+/-0.50	
M2PFTA	1126812	4.345933	1201475	4.345933	94	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	141589.4	3.827067	158939.7	3.82705	89	50 - 150	0.0000	+/-0.50	
MPFBA	466657.1	1.100017	535407.8	1.100017	87	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	188896	2.880217	198256.4	2.880217	95	50 - 150	0.0000	+/-0.50	
M6PFDA	608387.6	3.82755	655772.6	3.82755	93	50 - 150	0.0000	+/-0.50	
M3PFBS	133977.4	1.944683	152733.7	1.944683	88	50 - 150	0.0000	+/-0.50	
M7PFUnA	775407.6	3.970017	970086.3	3.970017	80	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	104304.1	3.477383	118652.9	3.469383	88	50 - 150	0.0080	+/-0.50	
M5PFPeA	475852.5	1.766017	542954.1	1.766017	88	50 - 150	0.0000	+/-0.50	
M5PFHxA	701470.5	2.638533	806083	2.629833	87	50 - 150	0.0087	+/-0.50	
M3PFHxS	93841.17	3.250667	113465.7	3.242583	83	50 - 150	0.0081	+/-0.50	
M4PFHpA	661459.3	3.21145	788599.9	3.21145	84	50 - 150	0.0000	+/-0.50	
M8PFOA	637503.4	3.485883	731896.8	3.485883	87	50 - 150	0.0000	+/-0.50	
M8PFOS	102805.8	3.676117	115760.4	3.676117	89	50 - 150	0.0000	+/-0.50	
M9PFNA	527643.1	3.67715	590592.1	3.669167	89	50 - 150	0.0080	+/-0.50	
MPFDoA	869874.6	4.104633	958941.3	4.104633	91	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	212063.7	3.977483	232413.1	3.977483	91	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	252600.2	3.9059	271353	3.897717	93	50 - 150	0.0082	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Initial Cal Check (S062953-ICV1)			Lab File ID: ICV1.d			Analyzed: 08/31/21 13:44			
M8FOSA	304994	4.02055	330569.3	4.02055	92	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	199090.5	2.5543	223527.9	2.5461	89	50 - 150	0.0082	+/-0.50	
M2PFtA	1126812	4.345933	1201475	4.345933	94	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	141589.4	3.827067	158939.7	3.82705	89	50 - 150	0.0000	+/-0.50	
MPFBA	466657.1	1.100017	535407.8	1.100017	87	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	188896	2.880217	198256.4	2.880217	95	50 - 150	0.0000	+/-0.50	
M6PFDA	608387.6	3.82755	655772.6	3.82755	93	50 - 150	0.0000	+/-0.50	
M3PFBS	133977.4	1.944683	152733.7	1.944683	88	50 - 150	0.0000	+/-0.50	
M7PFUnA	775407.6	3.970017	970086.3	3.970017	80	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	104304.1	3.477383	118652.9	3.469383	88	50 - 150	0.0080	+/-0.50	
M5PFPeA	475852.5	1.766017	542954.1	1.766017	88	50 - 150	0.0000	+/-0.50	
M5PFHxA	701470.5	2.638533	806083	2.629833	87	50 - 150	0.0087	+/-0.50	
M3PFHxS	93841.17	3.250667	113465.7	3.242583	83	50 - 150	0.0081	+/-0.50	
M4PFHpA	661459.3	3.21145	788599.9	3.21145	84	50 - 150	0.0000	+/-0.50	
M8PFOA	637503.4	3.485883	731896.8	3.485883	87	50 - 150	0.0000	+/-0.50	
M8PFOS	102805.8	3.676117	115760.4	3.676117	89	50 - 150	0.0000	+/-0.50	
M9PFNA	527643.1	3.67715	590592.1	3.669167	89	50 - 150	0.0080	+/-0.50	
MPFDoA	869874.6	4.104633	958941.3	4.104633	91	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	212063.7	3.977483	232413.1	3.977483	91	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	252600.2	3.9059	271353	3.897717	93	50 - 150	0.0082	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Instrument Blank (S063145-IBL1)									
			Lab File ID: IBL1090821.d			Analyzed: 09/09/21 13:21			
M8FOSA	265140.1	4.01255	330569.3	4.02055	80	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	169554.6	2.52145	223527.9	2.5461	76	50 - 150	-0.0246	+/-0.50	
M2PFTA	972009.4	4.3378	1201475	4.345933	81	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	119687.3	3.818733	158939.7	3.82705	75	50 - 150	-0.0083	+/-0.50	
MPFBA	404096.4	1.0917	535407.8	1.100017	75	50 - 150	-0.0083	+/-0.50	
M3HFPO-DA	181997.6	2.855667	198256.4	2.880217	92	50 - 150	-0.0246	+/-0.50	
M6PFDA	500044.1	3.81925	655772.6	3.82755	76	50 - 150	-0.0083	+/-0.50	
M3PFBS	116590.8	1.928117	152733.7	1.944683	76	50 - 150	-0.0166	+/-0.50	
M7PFUnA	699423.4	3.962017	970086.3	3.970017	72	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	95030.95	3.4614	118652.9	3.469383	80	50 - 150	-0.0080	+/-0.50	
M5PFPeA	417188.7	1.749417	542954.1	1.766017	77	50 - 150	-0.0166	+/-0.50	
M5PFHxA	605036.9	2.6134	806083	2.629833	75	50 - 150	-0.0164	+/-0.50	
M3PFHxS	82464.59	3.2345	113465.7	3.242583	73	50 - 150	-0.0081	+/-0.50	
M4PFHpA	578126.9	3.203083	788599.9	3.21145	73	50 - 150	-0.0084	+/-0.50	
M8PFOA	576354.9	3.4779	731896.8	3.485883	79	50 - 150	-0.0080	+/-0.50	
M8PFOS	83041.7	3.668117	115760.4	3.676117	72	50 - 150	-0.0080	+/-0.50	
M9PFNA	430848.3	3.669167	590592.1	3.669167	73	50 - 150	0.0000	+/-0.50	
MPFDoA	756304.9	4.096633	958941.3	4.104633	79	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	170706.9	3.969483	232413.1	3.977483	73	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	210335.8	3.889733	271353	3.897717	78	50 - 150	-0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S063145-CCV1)			Lab File ID: CCV1090821.d			Analyzed: 09/09/21 13:29			
M8FOSA	283179.8	4.01255	330569.3	4.02055	86	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	171285.8	2.52145	223527.9	2.5461	77	50 - 150	-0.0246	+/-0.50	
M2PFTA	996284.1	4.3378	1201475	4.345933	83	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	121601.6	3.818733	158939.7	3.82705	77	50 - 150	-0.0083	+/-0.50	
MPFBA	428104.1	1.0917	535407.8	1.100017	80	50 - 150	-0.0083	+/-0.50	
M3HFPO-DA	193827.6	2.86385	198256.4	2.880217	98	50 - 150	-0.0164	+/-0.50	
M6PFDA	499654.7	3.81925	655772.6	3.82755	76	50 - 150	-0.0083	+/-0.50	
M3PFBS	122515.7	1.928117	152733.7	1.944683	80	50 - 150	-0.0166	+/-0.50	
M7PFUnA	690149.1	3.962017	970086.3	3.970017	71	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	95220.45	3.469383	118652.9	3.469383	80	50 - 150	0.0000	+/-0.50	
M5PFPeA	430934.7	1.749417	542954.1	1.766017	79	50 - 150	-0.0166	+/-0.50	
M5PFHxA	630356.5	2.6134	806083	2.629833	78	50 - 150	-0.0164	+/-0.50	
M3PFHxS	87782.41	3.2345	113465.7	3.242583	77	50 - 150	-0.0081	+/-0.50	
M4PFHpA	600206	3.203083	788599.9	3.21145	76	50 - 150	-0.0084	+/-0.50	
M8PFOA	578970.1	3.4779	731896.8	3.485883	79	50 - 150	-0.0080	+/-0.50	
M8PFOS	91282	3.668133	115760.4	3.676117	79	50 - 150	-0.0080	+/-0.50	
M9PFNA	448415.6	3.669167	590592.1	3.669167	76	50 - 150	0.0000	+/-0.50	
MPFDoA	754263.1	4.096633	958941.3	4.104633	79	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	184598.9	3.969483	232413.1	3.977483	79	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	201419.3	3.889733	271353	3.897717	74	50 - 150	-0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B289344-BS1) Lab File ID: B289344-BS1.d Analyzed: 09/09/21 13:48									
M8FOSA	295085.3	4.01255	283179.8	4.01255	104	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	183002.8	2.537883	171285.8	2.52145	107	50 - 150	0.0164	+/-0.50	
M2PFtA	1108902	4.3378	996284.1	4.3378	111	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	124174.7	3.818733	121601.6	3.818733	102	50 - 150	0.0000	+/-0.50	
MPFBA	455264.9	1.100017	428104.1	1.0917	106	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	187286.3	2.872033	193827.6	2.86385	97	50 - 150	0.0082	+/-0.50	
M6PFDA	568462.7	3.81925	499654.7	3.81925	114	50 - 150	0.0000	+/-0.50	
M3PFBS	137014.6	1.9364	122515.7	1.928117	112	50 - 150	0.0083	+/-0.50	
M7PFUnA	794896.4	3.962017	690149.1	3.962017	115	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	91518.22	3.469383	95220.45	3.469383	96	50 - 150	0.0000	+/-0.50	
M5PFPeA	487543.6	1.757717	430934.7	1.749417	113	50 - 150	0.0083	+/-0.50	
M5PFHxA	716476.4	2.621617	630356.5	2.6134	114	50 - 150	0.0082	+/-0.50	
M3PFHxS	97212.3	3.242583	87782.41	3.2345	111	50 - 150	0.0081	+/-0.50	
M4PFHpA	697585.9	3.203083	600206	3.203083	116	50 - 150	0.0000	+/-0.50	
M8PFOA	630491.6	3.4779	578970.1	3.4779	109	50 - 150	0.0000	+/-0.50	
M8PFOS	102409.8	3.668133	91282	3.668133	112	50 - 150	0.0000	+/-0.50	
M9PFNA	506070.6	3.669167	448415.6	3.669167	113	50 - 150	0.0000	+/-0.50	
MPFDoA	856386.3	4.104633	754263.1	4.096633	114	50 - 150	0.0080	+/-0.50	
d5-NEtFOSAA	202953.9	3.969483	184598.9	3.969483	110	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	237417.7	3.897717	201419.3	3.889733	118	50 - 150	0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B289344-BLK1)			Lab File ID: B289344-BLK1.d			Analyzed: 09/09/21 13:56			
M8FOSA	284670.8	4.01255	283179.8	4.01255	101	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	180869.1	2.529667	171285.8	2.52145	106	50 - 150	0.0082	+/-0.50	
M2PFTA	1081648	4.3378	996284.1	4.3378	109	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	129311.3	3.818733	121601.6	3.818733	106	50 - 150	0.0000	+/-0.50	
MPFBA	442772.5	1.100017	428104.1	1.0917	103	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	201318.1	2.86385	193827.6	2.86385	104	50 - 150	0.0000	+/-0.50	
M6PFDA	562380.6	3.81925	499654.7	3.81925	113	50 - 150	0.0000	+/-0.50	
M3PFBS	131778.6	1.9364	122515.7	1.928117	108	50 - 150	0.0083	+/-0.50	
M7PFUnA	792489.6	3.962017	690149.1	3.962017	115	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	105673.3	3.469383	95220.45	3.469383	111	50 - 150	0.0000	+/-0.50	
M5PFPeA	471090.1	1.757717	430934.7	1.749417	109	50 - 150	0.0083	+/-0.50	
M5PFHxA	689878.3	2.621617	630356.5	2.6134	109	50 - 150	0.0082	+/-0.50	
M3PFHxS	93666.22	3.2345	87782.41	3.2345	107	50 - 150	0.0000	+/-0.50	
M4PFHpA	655270.1	3.203083	600206	3.203083	109	50 - 150	0.0000	+/-0.50	
M8PFOA	594055.5	3.4779	578970.1	3.4779	103	50 - 150	0.0000	+/-0.50	
M8PFOS	96029.23	3.668133	91282	3.668133	105	50 - 150	0.0000	+/-0.50	
M9PFNA	491716.6	3.669167	448415.6	3.669167	110	50 - 150	0.0000	+/-0.50	
MPFDoA	802788.8	4.104633	754263.1	4.096633	106	50 - 150	0.0080	+/-0.50	
d5-NEtFOSAA	175942.7	3.969483	184598.9	3.969483	95	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	237639.1	3.897717	201419.3	3.889733	118	50 - 150	0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Matrix Spike (B289344-MS1)									
			Lab File ID: B289344-MS1.d			Analyzed: 09/09/21 14:03			
M8FOSA	266274.3	4.01255	283179.8	4.01255	94	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	138568.5	2.529667	171285.8	2.52145	81	50 - 150	0.0082	+/-0.50	
M2PFTA	464740.5	4.3378	996284.1	4.3378	47	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS	97854.07	3.818733	121601.6	3.818733	80	50 - 150	0.0000	+/-0.50	
MPFBA	384777.9	1.100017	428104.1	1.0917	90	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	150859.1	2.86385	193827.6	2.86385	78	50 - 150	0.0000	+/-0.50	
M6PFDA	474828	3.81925	499654.7	3.81925	95	50 - 150	0.0000	+/-0.50	
M3PFBS	114380.1	1.9364	122515.7	1.928117	93	50 - 150	0.0083	+/-0.50	
M7PFUnA	663232.4	3.962017	690149.1	3.962017	96	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	76458.89	3.469383	95220.45	3.469383	80	50 - 150	0.0000	+/-0.50	
M5PFPeA	405945.8	1.757717	430934.7	1.749417	94	50 - 150	0.0083	+/-0.50	
M5PFHxA	599023.4	2.621617	630356.5	2.6134	95	50 - 150	0.0082	+/-0.50	
M3PFHxS	80320.7	3.2345	87782.41	3.2345	91	50 - 150	0.0000	+/-0.50	
M4PFHpA	579133.8	3.203083	600206	3.203083	96	50 - 150	0.0000	+/-0.50	
M8PFOA	522021.3	3.4779	578970.1	3.4779	90	50 - 150	0.0000	+/-0.50	
M8PFOS	85602.01	3.668133	91282	3.668133	94	50 - 150	0.0000	+/-0.50	
M9PFNA	438778.7	3.669167	448415.6	3.669167	98	50 - 150	0.0000	+/-0.50	
MPFDoA	645877.1	4.104633	754263.1	4.096633	86	50 - 150	0.0080	+/-0.50	
d5-NEtFOSAA	114961.3	3.969483	184598.9	3.969483	62	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	144005.7	3.897717	201419.3	3.889733	71	50 - 150	0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Matrix Spike Dup (B289344-MSD1)									
			Lab File ID: B289344-MSD1.d			Analyzed: 09/09/21 14:10			
M8FOSA	233010.7	4.01255	283179.8	4.01255	82	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	129298.9	2.529667	171285.8	2.52145	75	50 - 150	0.0082	+/-0.50	
M2PFTA	421009	4.3378	996284.1	4.3378	42	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS	91430.55	3.818733	121601.6	3.818733	75	50 - 150	0.0000	+/-0.50	
MPFBA	349404.4	1.100017	428104.1	1.0917	82	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	161394.4	2.86385	193827.6	2.86385	83	50 - 150	0.0000	+/-0.50	
M6PFDA	414940.7	3.81925	499654.7	3.81925	83	50 - 150	0.0000	+/-0.50	
M3PFBS	104802.6	1.928117	122515.7	1.928117	86	50 - 150	0.0000	+/-0.50	
M7PFUnA	604372.1	3.962017	690149.1	3.962017	88	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	71088.41	3.469383	95220.45	3.469383	75	50 - 150	0.0000	+/-0.50	
M5PFPeA	365872.2	1.757717	430934.7	1.749417	85	50 - 150	0.0083	+/-0.50	
M5PFHxA	538809.8	2.6134	630356.5	2.6134	85	50 - 150	0.0000	+/-0.50	
M3PFHxS	76015.77	3.2345	87782.41	3.2345	87	50 - 150	0.0000	+/-0.50	
M4PFHpA	515403	3.203083	600206	3.203083	86	50 - 150	0.0000	+/-0.50	
M8PFOA	466625.5	3.4779	578970.1	3.4779	81	50 - 150	0.0000	+/-0.50	
M8PFOS	78484.13	3.668133	91282	3.668133	86	50 - 150	0.0000	+/-0.50	
M9PFNA	367797.6	3.669167	448415.6	3.669167	82	50 - 150	0.0000	+/-0.50	
MPFDoA	547508.9	4.096633	754263.1	4.096633	73	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	102114.3	3.969483	184598.9	3.969483	55	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	144915.7	3.897717	201419.3	3.889733	72	50 - 150	0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
S-1 (21H1473-01)									
			Lab File ID: 21H1473-01.d			Analyzed: 09/09/21 14:25			
M8FOSA	262755.5	4.01255	283179.8	4.01255	93	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	115458	2.537883	171285.8	2.52145	67	50 - 150	0.0164	+/-0.50	
M2PF _{TA}	329258.9	4.3378	996284.1	4.3378	33	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS	88001.73	3.818733	121601.6	3.818733	72	50 - 150	0.0000	+/-0.50	
MPF _{BA}	359825	1.100017	428104.1	1.0917	84	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	157400.5	2.86385	193827.6	2.86385	81	50 - 150	0.0000	+/-0.50	
M6PF _{DA}	447467.8	3.81925	499654.7	3.81925	90	50 - 150	0.0000	+/-0.50	
M3PF _B S	106276.6	1.9364	122515.7	1.928117	87	50 - 150	0.0083	+/-0.50	
M7PF _U nA	643001.1	3.962017	690149.1	3.962017	93	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	67746.66	3.469383	95220.45	3.469383	71	50 - 150	0.0000	+/-0.50	
M5PF _{Pe} A	384630.3	1.757717	430934.7	1.749417	89	50 - 150	0.0083	+/-0.50	
M5PF _{Hx} A	551624.5	2.621617	630356.5	2.6134	88	50 - 150	0.0082	+/-0.50	
M3PF _{Hx} S	72430.57	3.242583	87782.41	3.2345	83	50 - 150	0.0081	+/-0.50	
M4PF _{Hp} A	527536.6	3.203083	600206	3.203083	88	50 - 150	0.0000	+/-0.50	
M8PF _{OA}	488969.8	3.4779	578970.1	3.4779	84	50 - 150	0.0000	+/-0.50	
M8PF _{OS}	75261.91	3.668133	91282	3.668133	82	50 - 150	0.0000	+/-0.50	
M9PF _{NA}	424317.7	3.669167	448415.6	3.669167	95	50 - 150	0.0000	+/-0.50	
MPF _{Do} A	538997.1	4.104633	754263.1	4.096633	71	50 - 150	0.0080	+/-0.50	
d5-NEtFOSAA	96355.95	3.969483	184598.9	3.969483	52	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	138380	3.897717	201419.3	3.889733	69	50 - 150	0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
S-3 (21H1473-03) Lab File ID: 21H1473-03.d Analyzed: 09/09/21 14:39									
M8FOSA	243991.8	4.01255	283179.8	4.01255	86	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	145401.9	2.537883	171285.8	2.52145	85	50 - 150	0.0164	+/-0.50	
M2PFTA	776079.9	4.345917	996284.1	4.3378	78	50 - 150	0.0081	+/-0.50	
M2-8:2FTS	111515	3.82705	121601.6	3.818733	92	50 - 150	0.0083	+/-0.50	
MPFBA	397363.1	1.100017	428104.1	1.0917	93	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	172599.1	2.872033	193827.6	2.86385	89	50 - 150	0.0082	+/-0.50	
M6PFDA	494525.9	3.81925	499654.7	3.81925	99	50 - 150	0.0000	+/-0.50	
M3PFBS	115978.9	1.9364	122515.7	1.928117	95	50 - 150	0.0083	+/-0.50	
M7PFUnA	704734.8	3.970017	690149.1	3.962017	102	50 - 150	0.0080	+/-0.50	
M2-6:2FTS	83877.79	3.469383	95220.45	3.469383	88	50 - 150	0.0000	+/-0.50	
M5PFPeA	422358.6	1.757717	430934.7	1.749417	98	50 - 150	0.0083	+/-0.50	
M5PFHxA	608546	2.621617	630356.5	2.6134	97	50 - 150	0.0082	+/-0.50	
M3PFHxS	85383.35	3.242583	87782.41	3.2345	97	50 - 150	0.0081	+/-0.50	
M4PFHpA	585552.4	3.203083	600206	3.203083	98	50 - 150	0.0000	+/-0.50	
M8PFOA	561270.1	3.4779	578970.1	3.4779	97	50 - 150	0.0000	+/-0.50	
M8PFOS	89940.11	3.668117	91282	3.668133	99	50 - 150	0.0000	+/-0.50	
M9PFNA	444993.6	3.669167	448415.6	3.669167	99	50 - 150	0.0000	+/-0.50	
MPFDoA	722911.2	4.104633	754263.1	4.096633	96	50 - 150	0.0080	+/-0.50	
d5-NEtFOSAA	141173.3	3.977483	184598.9	3.969483	76	50 - 150	0.0080	+/-0.50	
d3-NMeFOSAA	184011.7	3.897717	201419.3	3.889733	91	50 - 150	0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
S-4 (21H1473-04)									
			Lab File ID: 21H1473-04.d			Analyzed: 09/09/21 14:46			
M8FOSA	255634.2	4.01255	283179.8	4.01255	90	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	127585.3	2.537883	171285.8	2.52145	74	50 - 150	0.0164	+/-0.50	
M2PFTA	334371.4	4.3378	996284.1	4.3378	34	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS	99776.98	3.818733	121601.6	3.818733	82	50 - 150	0.0000	+/-0.50	
MPFBA	377708.7	1.100017	428104.1	1.0917	88	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	165554	2.872033	193827.6	2.86385	85	50 - 150	0.0082	+/-0.50	
M6PFDA	445437.1	3.81925	499654.7	3.81925	89	50 - 150	0.0000	+/-0.50	
M3PFBS	109308.6	1.9364	122515.7	1.928117	89	50 - 150	0.0083	+/-0.50	
M7PFUnA	601013.1	3.962017	690149.1	3.962017	87	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	74915.16	3.469383	95220.45	3.469383	79	50 - 150	0.0000	+/-0.50	
M5PFPeA	400655.2	1.757717	430934.7	1.749417	93	50 - 150	0.0083	+/-0.50	
M5PFHxA	575881.6	2.621617	630356.5	2.6134	91	50 - 150	0.0082	+/-0.50	
M3PFHxS	80104.36	3.242583	87782.41	3.2345	91	50 - 150	0.0081	+/-0.50	
M4PFHpA	563725.1	3.203083	600206	3.203083	94	50 - 150	0.0000	+/-0.50	
M8PFOA	502948.3	3.4779	578970.1	3.4779	87	50 - 150	0.0000	+/-0.50	
M8PFOS	80412.7	3.668133	91282	3.668133	88	50 - 150	0.0000	+/-0.50	
M9PFNA	411024.4	3.669167	448415.6	3.669167	92	50 - 150	0.0000	+/-0.50	
MPFDoA	569743.6	4.104633	754263.1	4.096633	76	50 - 150	0.0080	+/-0.50	
d5-NEtFOSAA	86781.23	3.969483	184598.9	3.969483	47	50 - 150	0.0000	+/-0.50	*
d3-NMeFOSAA	148084	3.897717	201419.3	3.889733	74	50 - 150	0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
S-4 Dup (21H1473-05)									
			Lab File ID: 21H1473-05.d			Analyzed: 09/09/21 14:53			
M8FOSA	244464.6	4.01255	283179.8	4.01255	86	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	112326.9	2.529667	171285.8	2.52145	66	50 - 150	0.0082	+/-0.50	
M2PF _{TA}	250424.1	4.3378	996284.1	4.3378	25	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS	83186.8	3.82705	121601.6	3.818733	68	50 - 150	0.0083	+/-0.50	
MPF _{BA}	351706.5	1.100017	428104.1	1.0917	82	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	148272.5	2.86385	193827.6	2.86385	76	50 - 150	0.0000	+/-0.50	
M6PF _{DA}	421755.3	3.81925	499654.7	3.81925	84	50 - 150	0.0000	+/-0.50	
M3PF _{BS}	101622.1	1.9364	122515.7	1.928117	83	50 - 150	0.0083	+/-0.50	
M7PF _{UnA}	533095.4	3.962017	690149.1	3.962017	77	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	64092.71	3.469383	95220.45	3.469383	67	50 - 150	0.0000	+/-0.50	
M5PF _{PeA}	370498.4	1.757717	430934.7	1.749417	86	50 - 150	0.0083	+/-0.50	
M5PF _{HxA}	536264	2.621617	630356.5	2.6134	85	50 - 150	0.0082	+/-0.50	
M3PF _{HxS}	71697.16	3.242583	87782.41	3.2345	82	50 - 150	0.0081	+/-0.50	
M4PF _{HpA}	496030.5	3.203083	600206	3.203083	83	50 - 150	0.0000	+/-0.50	
M8PF _{OA}	480536.2	3.4779	578970.1	3.4779	83	50 - 150	0.0000	+/-0.50	
M8PF _{OS}	74745.13	3.668133	91282	3.668133	82	50 - 150	0.0000	+/-0.50	
M9PF _{NA}	392177.2	3.669167	448415.6	3.669167	87	50 - 150	0.0000	+/-0.50	
MPF _{DoA}	483149.8	4.104633	754263.1	4.096633	64	50 - 150	0.0080	+/-0.50	
d5-NEtFOSAA	86166.75	3.969483	184598.9	3.969483	47	50 - 150	0.0000	+/-0.50	*
d3-NMeFOSAA	130672.6	3.897717	201419.3	3.889733	65	50 - 150	0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
S-5 (21H1473-06)									
			Lab File ID: 21H1473-06.d			Analyzed: 09/09/21 15:01			
M8FOSA	247560.3	4.01255	283179.8	4.01255	87	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	135040.8	2.537883	171285.8	2.52145	79	50 - 150	0.0164	+/-0.50	
M2PFTA	898744.4	4.3378	996284.1	4.3378	90	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	110667.5	3.818733	121601.6	3.818733	91	50 - 150	0.0000	+/-0.50	
MPFBA	392523.8	1.100017	428104.1	1.0917	92	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	176974.1	2.872033	193827.6	2.86385	91	50 - 150	0.0082	+/-0.50	
M6PFDA	509432.7	3.81925	499654.7	3.81925	102	50 - 150	0.0000	+/-0.50	
M3PFBS	116000.3	1.9364	122515.7	1.928117	95	50 - 150	0.0083	+/-0.50	
M7PFUnA	711901.8	3.970017	690149.1	3.962017	103	50 - 150	0.0080	+/-0.50	
M2-6:2FTS	88904.35	3.469383	95220.45	3.469383	93	50 - 150	0.0000	+/-0.50	
M5PFPeA	415307.7	1.757717	430934.7	1.749417	96	50 - 150	0.0083	+/-0.50	
M5PFHxA	601586.4	2.621617	630356.5	2.6134	95	50 - 150	0.0082	+/-0.50	
M3PFHxS	84103.48	3.242583	87782.41	3.2345	96	50 - 150	0.0081	+/-0.50	
M4PFHpA	579190	3.203083	600206	3.203083	96	50 - 150	0.0000	+/-0.50	
M8PFOA	544570.7	3.4779	578970.1	3.4779	94	50 - 150	0.0000	+/-0.50	
M8PFOS	89299.68	3.668133	91282	3.668133	98	50 - 150	0.0000	+/-0.50	
M9PFNA	450322.4	3.669167	448415.6	3.669167	100	50 - 150	0.0000	+/-0.50	
MPFDoA	716830.1	4.104633	754263.1	4.096633	95	50 - 150	0.0080	+/-0.50	
d5-NEtFOSAA	165024	3.977483	184598.9	3.969483	89	50 - 150	0.0080	+/-0.50	
d3-NMeFOSAA	202950.3	3.897717	201419.3	3.889733	101	50 - 150	0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
S-6 (21H1473-07)									
			Lab File ID: 21H1473-07.d			Analyzed: 09/09/21 15:08			
M8FOSA	259590.9	4.01255	283179.8	4.01255	92	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	136858.4	2.537883	171285.8	2.52145	80	50 - 150	0.0164	+/-0.50	
M2PFTA	949322.7	4.3378	996284.1	4.3378	95	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	126155.5	3.818733	121601.6	3.818733	104	50 - 150	0.0000	+/-0.50	
MPFBA	393800.5	1.100017	428104.1	1.0917	92	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	176254	2.872033	193827.6	2.86385	91	50 - 150	0.0082	+/-0.50	
M6PFDA	500675.9	3.81925	499654.7	3.81925	100	50 - 150	0.0000	+/-0.50	
M3PFBS	115217.1	1.9364	122515.7	1.928117	94	50 - 150	0.0083	+/-0.50	
M7PFUnA	703632	3.962017	690149.1	3.962017	102	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	82839.95	3.469383	95220.45	3.469383	87	50 - 150	0.0000	+/-0.50	
M5PFPeA	417479.4	1.757717	430934.7	1.749417	97	50 - 150	0.0083	+/-0.50	
M5PFHxA	595487.9	2.621617	630356.5	2.6134	94	50 - 150	0.0082	+/-0.50	
M3PFHxS	82876.28	3.242583	87782.41	3.2345	94	50 - 150	0.0081	+/-0.50	
M4PFHpA	561640	3.203083	600206	3.203083	94	50 - 150	0.0000	+/-0.50	
M8PFOA	548705.6	3.4779	578970.1	3.4779	95	50 - 150	0.0000	+/-0.50	
M8PFOS	86638.23	3.668117	91282	3.668133	95	50 - 150	0.0000	+/-0.50	
M9PFNA	450644.8	3.669167	448415.6	3.669167	100	50 - 150	0.0000	+/-0.50	
MPFDoA	716292.3	4.104633	754263.1	4.096633	95	50 - 150	0.0080	+/-0.50	
d5-NEtFOSAA	155770.5	3.969483	184598.9	3.969483	84	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	203276.5	3.897717	201419.3	3.889733	101	50 - 150	0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
S-7 (21H1473-08)									
			Lab File ID: 21H1473-08.d			Analyzed: 09/09/21 15:15			
M8FOSA	283409.3	4.01255	283179.8	4.01255	100	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	150759.9	2.537883	171285.8	2.52145	88	50 - 150	0.0164	+/-0.50	
M2PFTA	939135.3	4.3378	996284.1	4.3378	94	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	109585.1	3.82705	121601.6	3.818733	90	50 - 150	0.0083	+/-0.50	
MPFBA	424167.4	1.100017	428104.1	1.0917	99	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	192054.1	2.872033	193827.6	2.86385	99	50 - 150	0.0082	+/-0.50	
M6PFDA	550951.2	3.81925	499654.7	3.81925	110	50 - 150	0.0000	+/-0.50	
M3PFBS	124508.4	1.9364	122515.7	1.928117	102	50 - 150	0.0083	+/-0.50	
M7PFUnA	765812	3.962017	690149.1	3.962017	111	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	84807.2	3.469383	95220.45	3.469383	89	50 - 150	0.0000	+/-0.50	
M5PFPeA	445591.8	1.757717	430934.7	1.749417	103	50 - 150	0.0083	+/-0.50	
M5PFHxA	645111.9	2.621617	630356.5	2.6134	102	50 - 150	0.0082	+/-0.50	
M3PFHxS	87611.49	3.242583	87782.41	3.2345	100	50 - 150	0.0081	+/-0.50	
M4PFHpA	631750.4	3.203083	600206	3.203083	105	50 - 150	0.0000	+/-0.50	
M8PFOA	596036.8	3.4779	578970.1	3.4779	103	50 - 150	0.0000	+/-0.50	
M8PFOS	91686.7	3.668117	91282	3.668133	100	50 - 150	0.0000	+/-0.50	
M9PFNA	488628.2	3.669167	448415.6	3.669167	109	50 - 150	0.0000	+/-0.50	
MPFDoA	768917.5	4.104633	754263.1	4.096633	102	50 - 150	0.0080	+/-0.50	
d5-NEtFOSAA	162358.4	3.969483	184598.9	3.969483	88	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	216452.8	3.897717	201419.3	3.889733	107	50 - 150	0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S063145-CCV2)			Lab File ID: CCV2090921.d			Analyzed: 09/09/21 15:29			
M8FOSA	275273.9	4.01255	283179.8	4.01255	97	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	171403.5	2.529667	171285.8	2.52145	100	50 - 150	0.0082	+/-0.50	
M2PFtA	995939.2	4.3378	996284.1	4.3378	100	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	131168.2	3.818733	121601.6	3.818733	108	50 - 150	0.0000	+/-0.50	
MPFBA	401598.9	1.100017	428104.1	1.0917	94	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	168245.6	2.86385	193827.6	2.86385	87	50 - 150	0.0000	+/-0.50	
M6PFDA	490787.8	3.81925	499654.7	3.81925	98	50 - 150	0.0000	+/-0.50	
M3PFBS	114940	1.928117	122515.7	1.928117	94	50 - 150	0.0000	+/-0.50	
M7PFUnA	734700.5	3.962017	690149.1	3.962017	106	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	97414.25	3.469383	95220.45	3.469383	102	50 - 150	0.0000	+/-0.50	
M5PFPeA	406699.7	1.757717	430934.7	1.749417	94	50 - 150	0.0083	+/-0.50	
M5PFHxA	596188.8	2.6134	630356.5	2.6134	95	50 - 150	0.0000	+/-0.50	
M3PFHxS	80129.29	3.242583	87782.41	3.2345	91	50 - 150	0.0081	+/-0.50	
M4PFHpA	557237.9	3.203083	600206	3.203083	93	50 - 150	0.0000	+/-0.50	
M8PFOA	542761.1	3.4779	578970.1	3.4779	94	50 - 150	0.0000	+/-0.50	
M8PFOS	82333.21	3.668133	91282	3.668133	90	50 - 150	0.0000	+/-0.50	
M9PFNA	421646.7	3.669167	448415.6	3.669167	94	50 - 150	0.0000	+/-0.50	
MPFDoA	709111.8	4.104633	754263.1	4.096633	94	50 - 150	0.0080	+/-0.50	
d5-NEtFOSAA	167168.4	3.969483	184598.9	3.969483	91	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	212531.3	3.897717	201419.3	3.889733	106	50 - 150	0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S063145-CCV3)			Lab File ID: CCV3090921.d			Analyzed: 09/09/21 16:49			
M8FOSA	248109.1	4.01255	275273.9	4.01255	90	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	162030.6	2.529667	171403.5	2.529667	95	50 - 150	0.0000	+/-0.50	
M2PFTA	975259.8	4.3378	995939.2	4.3378	98	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	126725.3	3.818733	131168.2	3.818733	97	50 - 150	0.0000	+/-0.50	
MPFBA	400021.1	1.100017	401598.9	1.100017	100	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	164950.4	2.86385	168245.6	2.86385	98	50 - 150	0.0000	+/-0.50	
M6PFDA	489289.1	3.81925	490787.8	3.81925	100	50 - 150	0.0000	+/-0.50	
M3PFBS	112807.2	1.928117	114940	1.928117	98	50 - 150	0.0000	+/-0.50	
M7PFUnA	756198	3.962017	734700.5	3.962017	103	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	98041.66	3.4694	97414.25	3.469383	101	50 - 150	0.0000	+/-0.50	
M5PFPeA	402340.3	1.749417	406699.7	1.757717	99	50 - 150	-0.0083	+/-0.50	
M5PFHxA	584998.7	2.6134	596188.8	2.6134	98	50 - 150	0.0000	+/-0.50	
M3PFHxS	83156.85	3.2345	80129.29	3.242583	104	50 - 150	-0.0081	+/-0.50	
M4PFHpA	557700.4	3.203083	557237.9	3.203083	100	50 - 150	0.0000	+/-0.50	
M8PFOA	535182.1	3.4779	542761.1	3.4779	99	50 - 150	0.0000	+/-0.50	
M8PFOS	86298.61	3.668133	82333.21	3.668133	105	50 - 150	0.0000	+/-0.50	
M9PFNA	444464.8	3.669167	421646.7	3.669167	105	50 - 150	0.0000	+/-0.50	
MPFDoA	735074.9	4.096633	709111.8	4.104633	104	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	172904.6	3.969483	167168.4	3.969483	103	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	207878.3	3.897717	212531.3	3.897717	98	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Initial Cal Check (S063185-ICV1)			Lab File ID: ICV1.d			Analyzed: 09/13/21 14:43			
M8FOSA	315237.9	4.01255	268823.1	4.01255	117	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	109050.8	2.5543	97369.49	2.5543	112	50 - 150	0.0000	+/-0.50	
M2PFTA	1005071	4.35405	923995.6	4.35405	109	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	62946.31	3.835017	57813.52	3.835017	109	50 - 150	0.0000	+/-0.50	
MPFBA	494264.8	1.108317	448987.7	1.108317	110	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	145586.3	2.880217	158634.6	2.8884	92	50 - 150	-0.0082	+/-0.50	
M6PFDA	530390.5	3.82755	492195.1	3.82755	108	50 - 150	0.0000	+/-0.50	
M3PFBS	137853.9	1.944683	125831.8	1.95315	110	50 - 150	-0.0085	+/-0.50	
M7PFUnA	723855.7	3.978017	664748.3	3.978017	109	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	48480.49	3.477383	39058.75	3.477367	124	50 - 150	0.0000	+/-0.50	
M5PFPeA	499049.4	1.766017	452931.4	1.7743	110	50 - 150	-0.0083	+/-0.50	
M5PFHxA	726761.9	2.638533	662228.1	2.638533	110	50 - 150	0.0000	+/-0.50	
M3PFHxS	97748.78	3.250667	86390.75	3.250667	113	50 - 150	0.0000	+/-0.50	
M4PFHpA	670773.2	3.219533	625485.3	3.219533	107	50 - 150	0.0000	+/-0.50	
M8PFOA	625746	3.485883	591354.1	3.485883	106	50 - 150	0.0000	+/-0.50	
M8PFOS	105569.2	3.676117	98693.27	3.676117	107	50 - 150	0.0000	+/-0.50	
M9PFNA	501508.1	3.67715	466596	3.67715	107	50 - 150	0.0000	+/-0.50	
MPFDoA	757977.9	4.112633	722652.6	4.112633	105	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	161622.7	3.985483	150642.9	3.985483	107	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	178184.3	3.9059	174970.3	3.9059	102	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Instrument Blank (S063215-IBL1)									
			Lab File ID: IBL1091021.d			Analyzed: 09/10/21 15:15			
M8FOSA	268234.8	4.01255	330569.3	4.02055	81	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	190284.5	2.52145	223527.9	2.5461	85	50 - 150	-0.0246	+/-0.50	
M2PF _{TA}	1168732	4.329683	1201475	4.345933	97	50 - 150	-0.0162	+/-0.50	
M2-8:2FTS	154041.9	3.818733	158939.7	3.82705	97	50 - 150	-0.0083	+/-0.50	
MPF _{BA}	434373.9	1.0917	535407.8	1.100017	81	50 - 150	-0.0083	+/-0.50	
M3HFPO-DA	206117.3	2.855667	198256.4	2.880217	104	50 - 150	-0.0246	+/-0.50	
M6PF _{DA}	548610.3	3.81925	655772.6	3.82755	84	50 - 150	-0.0083	+/-0.50	
M3PF _{BS}	126700.5	1.919817	152733.7	1.944683	83	50 - 150	-0.0249	+/-0.50	
M7PF _{UnA}	799690.8	3.962017	970086.3	3.970017	82	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	116230.5	3.4614	118652.9	3.469383	98	50 - 150	-0.0080	+/-0.50	
M5PF _{PeA}	440201.2	1.749417	542954.1	1.766017	81	50 - 150	-0.0166	+/-0.50	
M5PF _{HxA}	668888.3	2.605183	806083	2.629833	83	50 - 150	-0.0247	+/-0.50	
M3PF _{HxS}	92358.87	3.2345	113465.7	3.242583	81	50 - 150	-0.0081	+/-0.50	
M4PF _{HpA}	637262.4	3.195017	788599.9	3.21145	81	50 - 150	-0.0164	+/-0.50	
M8PF _{OA}	602143.9	3.4779	731896.8	3.485883	82	50 - 150	-0.0080	+/-0.50	
M8PF _{OS}	92337.18	3.660133	115760.4	3.676117	80	50 - 150	-0.0160	+/-0.50	
M9PF _{NA}	502286.6	3.661183	590592.1	3.669167	85	50 - 150	-0.0080	+/-0.50	
MPF _{DoA}	786701.9	4.096633	958941.3	4.104633	82	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	191724.9	3.969483	232413.1	3.977483	82	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	228549.9	3.889733	271353	3.897717	84	50 - 150	-0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S063215-CCV1)			Lab File ID: CCV1091021.d			Analyzed: 09/10/21 15:22			
M8FOSA	283091.6	4.01255	330569.3	4.02055	86	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	190571.8	2.52145	223527.9	2.5461	85	50 - 150	-0.0246	+/-0.50	
M2PFTA	1067489	4.3378	1201475	4.345933	89	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	163659.2	3.818733	158939.7	3.82705	103	50 - 150	-0.0083	+/-0.50	
MPFBA	448729.7	1.0917	535407.8	1.100017	84	50 - 150	-0.0083	+/-0.50	
M3HFPO-DA	219263	2.855667	198256.4	2.880217	111	50 - 150	-0.0246	+/-0.50	
M6PFDA	580401.1	3.81925	655772.6	3.82755	89	50 - 150	-0.0083	+/-0.50	
M3PFBS	128976.1	1.919817	152733.7	1.944683	84	50 - 150	-0.0249	+/-0.50	
M7PFUnA	791390.3	3.962017	970086.3	3.970017	82	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	113018.4	3.4614	118652.9	3.469383	95	50 - 150	-0.0080	+/-0.50	
M5PFPeA	448427.7	1.749417	542954.1	1.766017	83	50 - 150	-0.0166	+/-0.50	
M5PFHxA	676027.6	2.605183	806083	2.629833	84	50 - 150	-0.0247	+/-0.50	
M3PFHxS	94286.73	3.2345	113465.7	3.242583	83	50 - 150	-0.0081	+/-0.50	
M4PFHpA	651990.3	3.203083	788599.9	3.21145	83	50 - 150	-0.0084	+/-0.50	
M8PFOA	618801.6	3.4779	731896.8	3.485883	85	50 - 150	-0.0080	+/-0.50	
M8PFOS	91584.64	3.660133	115760.4	3.676117	79	50 - 150	-0.0160	+/-0.50	
M9PFNA	504119.1	3.661183	590592.1	3.669167	85	50 - 150	-0.0080	+/-0.50	
MPFDoA	854827.6	4.096633	958941.3	4.104633	89	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	203247	3.969483	232413.1	3.977483	87	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	248140.4	3.889733	271353	3.897717	91	50 - 150	-0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S063215-CCV2)			Lab File ID: CCV2091021.d			Analyzed: 09/10/21 17:27			
M8FOSA	294425.7	4.01255	283091.6	4.01255	104	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	177243.6	2.52145	190571.8	2.52145	93	50 - 150	0.0000	+/-0.50	
M2PF _T A	1053649	4.3378	1067489	4.3378	99	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	132041.2	3.818733	163659.2	3.818733	81	50 - 150	0.0000	+/-0.50	
MPF _B A	448718.9	1.0917	448729.7	1.0917	100	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	195388.6	2.855667	219263	2.855667	89	50 - 150	0.0000	+/-0.50	
M6PF _D A	571698.4	3.81925	580401.1	3.81925	99	50 - 150	0.0000	+/-0.50	
M3PF _B S	127975.5	1.928117	128976.1	1.919817	99	50 - 150	0.0083	+/-0.50	
M7PF _U nA	816297.1	3.962017	791390.3	3.962017	103	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	102037.5	3.4614	113018.4	3.4614	90	50 - 150	0.0000	+/-0.50	
M5PF _P eA	452209.3	1.749417	448427.7	1.749417	101	50 - 150	0.0000	+/-0.50	
M5PF _H xA	677840.8	2.605183	676027.6	2.605183	100	50 - 150	0.0000	+/-0.50	
M3PF _H xS	87872.16	3.2345	94286.73	3.2345	93	50 - 150	0.0000	+/-0.50	
M4PF _H pA	644405.7	3.203083	651990.3	3.203083	99	50 - 150	0.0000	+/-0.50	
M8PF _O A	606579.3	3.4779	618801.6	3.4779	98	50 - 150	0.0000	+/-0.50	
M8PF _O S	98420.23	3.66015	91584.64	3.660133	107	50 - 150	0.0000	+/-0.50	
M9PF _N A	499046.1	3.661183	504119.1	3.661183	99	50 - 150	0.0000	+/-0.50	
MPF _D oA	803924	4.09665	854827.6	4.096633	94	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	197849.3	3.9695	203247	3.969483	97	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	229590	3.889733	248140.4	3.889733	93	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<p>LCS (B289650-BS1) Lab File ID: B289650-BS1.d Analyzed: 09/10/21 17:34</p>									
M8FOSA	232896.3	4.01255	294425.7	4.01255	79	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	148427	2.52145	177243.6	2.52145	84	50 - 150	0.0000	+/-0.50	
M2PFTA	900949.1	4.3378	1053649	4.3378	86	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	117738.9	3.818733	132041.2	3.818733	89	50 - 150	0.0000	+/-0.50	
MPFBA	447721.5	1.100017	448718.9	1.0917	100	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	198928.7	2.855667	195388.6	2.855667	102	50 - 150	0.0000	+/-0.50	
M6PFDA	506232.2	3.81925	571698.4	3.81925	89	50 - 150	0.0000	+/-0.50	
M3PFBS	114888.5	1.928117	127975.5	1.928117	90	50 - 150	0.0000	+/-0.50	
M7PFUnA	651249.3	3.962017	816297.1	3.962017	80	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	83787.08	3.4614	102037.5	3.4614	82	50 - 150	0.0000	+/-0.50	
M5PFPeA	423310.6	1.749417	452209.3	1.749417	94	50 - 150	0.0000	+/-0.50	
M5PFHxA	622142.2	2.605183	677840.8	2.605183	92	50 - 150	0.0000	+/-0.50	
M3PFHxS	82377.31	3.2345	87872.16	3.2345	94	50 - 150	0.0000	+/-0.50	
M4PFHpA	601651.5	3.203083	644405.7	3.203083	93	50 - 150	0.0000	+/-0.50	
M8PFOA	557516.8	3.4779	606579.3	3.4779	92	50 - 150	0.0000	+/-0.50	
M8PFOS	82204.62	3.660133	98420.23	3.66015	84	50 - 150	0.0000	+/-0.50	
M9PFNA	441746.7	3.661183	499046.1	3.661183	89	50 - 150	0.0000	+/-0.50	
MPFDoA	678648.1	4.096633	803924	4.09665	84	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	156053.7	3.969483	197849.3	3.9695	79	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	201613.7	3.889733	229590	3.889733	88	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS Dup (B289650-BSD1)									
			Lab File ID: B289650-BSD1.d			Analyzed: 09/10/21 17:41			
M8FOSA	237925.4	4.02055	294425.7	4.01255	81	50 - 150	0.0080	+/-0.50	
M2-4:2FTS	148934	2.52145	177243.6	2.52145	84	50 - 150	0.0000	+/-0.50	
M2PFTA	899757.9	4.3378	1053649	4.3378	85	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	118538.2	3.818733	132041.2	3.818733	90	50 - 150	0.0000	+/-0.50	
MPFBA	464897.5	1.100017	448718.9	1.0917	104	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	175971.3	2.855667	195388.6	2.855667	90	50 - 150	0.0000	+/-0.50	
M6PFDA	531078.6	3.81925	571698.4	3.81925	93	50 - 150	0.0000	+/-0.50	
M3PFBS	111246.3	1.928117	127975.5	1.928117	87	50 - 150	0.0000	+/-0.50	
M7PFUnA	642197.9	3.962017	816297.1	3.962017	79	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	94431.75	3.461417	102037.5	3.4614	93	50 - 150	0.0000	+/-0.50	
M5PFPeA	428731.7	1.749417	452209.3	1.749417	95	50 - 150	0.0000	+/-0.50	
M5PFHxA	633286	2.605183	677840.8	2.605183	93	50 - 150	0.0000	+/-0.50	
M3PFHxS	82628.05	3.2345	87872.16	3.2345	94	50 - 150	0.0000	+/-0.50	
M4PFHpA	606887.4	3.203083	644405.7	3.203083	94	50 - 150	0.0000	+/-0.50	
M8PFOA	574544.1	3.4779	606579.3	3.4779	95	50 - 150	0.0000	+/-0.50	
M8PFOS	83712.45	3.660133	98420.23	3.66015	85	50 - 150	0.0000	+/-0.50	
M9PFNA	493171.8	3.661183	499046.1	3.661183	99	50 - 150	0.0000	+/-0.50	
MPFDoA	678221.1	4.096633	803924	4.09665	84	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	165460.5	3.9695	197849.3	3.9695	84	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	202259.9	3.889733	229590	3.889733	88	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B289650-BLK1)									
			Lab File ID: B289650-BLK1.d			Analyzed: 09/10/21 17:48			
M8FOSA	213986.7	4.02055	294425.7	4.01255	73	50 - 150	0.0080	+/-0.50	
M2-4:2FTS	146120.7	2.529667	177243.6	2.52145	82	50 - 150	0.0082	+/-0.50	
M2PFTA	864466.8	4.3378	1053649	4.3378	82	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	106404.4	3.818733	132041.2	3.818733	81	50 - 150	0.0000	+/-0.50	
MPFBA	450854.8	1.100017	448718.9	1.0917	100	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	189764.3	2.86385	195388.6	2.855667	97	50 - 150	0.0082	+/-0.50	
M6PFDA	525611.5	3.81925	571698.4	3.81925	92	50 - 150	0.0000	+/-0.50	
M3PFBS	114622.3	1.928117	127975.5	1.928117	90	50 - 150	0.0000	+/-0.50	
M7PFUnA	634167.8	3.962017	816297.1	3.962017	78	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	95045.97	3.4614	102037.5	3.4614	93	50 - 150	0.0000	+/-0.50	
M5PFPeA	422271.3	1.749417	452209.3	1.749417	93	50 - 150	0.0000	+/-0.50	
M5PFHxA	605620.8	2.6134	677840.8	2.605183	89	50 - 150	0.0082	+/-0.50	
M3PFHxS	82806.38	3.2345	87872.16	3.2345	94	50 - 150	0.0000	+/-0.50	
M4PFHpA	598083.1	3.203083	644405.7	3.203083	93	50 - 150	0.0000	+/-0.50	
M8PFOA	591745.5	3.4779	606579.3	3.4779	98	50 - 150	0.0000	+/-0.50	
M8PFOS	90406.61	3.668133	98420.23	3.66015	92	50 - 150	0.0080	+/-0.50	
M9PFNA	446808.8	3.661183	499046.1	3.661183	90	50 - 150	0.0000	+/-0.50	
MPFDoA	604093.6	4.096633	803924	4.09665	75	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	154051.9	3.969483	197849.3	3.9695	78	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	187761.8	3.889733	229590	3.889733	82	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Field Blank (21H1473-10)									
			Lab File ID: 21H1473-10.d			Analyzed: 09/10/21 18:17			
M8FOSA	180034.9	4.01255	294425.7	4.01255	61	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	126386.4	2.52145	177243.6	2.52145	71	50 - 150	0.0000	+/-0.50	
M2PFTA	744182.7	4.329683	1053649	4.3378	71	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	86981.26	3.818733	132041.2	3.818733	66	50 - 150	0.0000	+/-0.50	
MPFBA	440254.1	1.100017	448718.9	1.0917	98	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	176313.9	2.855667	195388.6	2.855667	90	50 - 150	0.0000	+/-0.50	
M6PFDA	492883.7	3.81925	571698.4	3.81925	86	50 - 150	0.0000	+/-0.50	
M3PFBS	112634	1.928117	127975.5	1.928117	88	50 - 150	0.0000	+/-0.50	
M7PFUnA	697481.1	3.962017	816297.1	3.962017	85	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	105601	3.4614	102037.5	3.4614	103	50 - 150	0.0000	+/-0.50	
M5PFPeA	418299.2	1.749417	452209.3	1.749417	93	50 - 150	0.0000	+/-0.50	
M5PFHxA	608100.9	2.605183	677840.8	2.605183	90	50 - 150	0.0000	+/-0.50	
M3PFHxS	81655.02	3.2345	87872.16	3.2345	93	50 - 150	0.0000	+/-0.50	
M4PFHpA	589826.5	3.203083	644405.7	3.203083	92	50 - 150	0.0000	+/-0.50	
M8PFOA	556338.3	3.4779	606579.3	3.4779	92	50 - 150	0.0000	+/-0.50	
M8PFOS	83919.17	3.660133	98420.23	3.66015	85	50 - 150	0.0000	+/-0.50	
M9PFNA	427918.2	3.661183	499046.1	3.661183	86	50 - 150	0.0000	+/-0.50	
MPFDoA	623651.8	4.096633	803924	4.09665	78	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	169286.3	3.969483	197849.3	3.9695	86	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	191936.5	3.889733	229590	3.889733	84	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Trip Blank (21H1473-12)									
			Lab File ID: 21H1473-12.d			Analyzed: 09/10/21 18:24			
M8FOSA	233972.6	4.020534	294425.7	4.01255	79	50 - 150	0.0080	+/-0.50	
M2-4:2FTS	135282.3	2.52145	177243.6	2.52145	76	50 - 150	0.0000	+/-0.50	
M2PF _{TA}	824388.9	4.3378	1053649	4.3378	78	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	109559	3.818733	132041.2	3.818733	83	50 - 150	0.0000	+/-0.50	
MPF _{BA}	455687.2	1.100017	448718.9	1.0917	102	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	181900.7	2.855667	195388.6	2.855667	93	50 - 150	0.0000	+/-0.50	
M6PF _{DA}	500746.8	3.81925	571698.4	3.81925	88	50 - 150	0.0000	+/-0.50	
M3PF _{BS}	114708.2	1.928117	127975.5	1.928117	90	50 - 150	0.0000	+/-0.50	
M7PF _{UnA}	708158.3	3.962017	816297.1	3.962017	87	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	88724.62	3.4614	102037.5	3.4614	87	50 - 150	0.0000	+/-0.50	
M5PF _{PeA}	421200	1.749417	452209.3	1.749417	93	50 - 150	0.0000	+/-0.50	
M5PF _{HxA}	619913.3	2.605183	677840.8	2.605183	91	50 - 150	0.0000	+/-0.50	
M3PF _{HxS}	80242.77	3.2345	87872.16	3.2345	91	50 - 150	0.0000	+/-0.50	
M4PF _{HpA}	600403.6	3.203083	644405.7	3.203083	93	50 - 150	0.0000	+/-0.50	
M8PF _{OA}	586728.1	3.4779	606579.3	3.4779	97	50 - 150	0.0000	+/-0.50	
M8PF _{OS}	94266.45	3.660133	98420.23	3.66015	96	50 - 150	0.0000	+/-0.50	
M9PF _{NA}	470821	3.661183	499046.1	3.661183	94	50 - 150	0.0000	+/-0.50	
MPF _{DoA}	604472.1	4.096633	803924	4.09665	75	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	163756.8	3.969483	197849.3	3.9695	83	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	167387.3	3.889733	229590	3.889733	73	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S063215-CCV3)			Lab File ID: CCV3091021.d			Analyzed: 09/10/21 19:07			
M8FOSA	294805.5	4.01255	294425.7	4.01255	100	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	189469.5	2.52145	177243.6	2.52145	107	50 - 150	0.0000	+/-0.50	
M2PFTA	1144504	4.329683	1053649	4.3378	109	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	143274.3	3.818733	132041.2	3.818733	109	50 - 150	0.0000	+/-0.50	
MPFBA	463730.2	1.0917	448718.9	1.0917	103	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	202548.1	2.855667	195388.6	2.855667	104	50 - 150	0.0000	+/-0.50	
M6PFDA	586666.1	3.81925	571698.4	3.81925	103	50 - 150	0.0000	+/-0.50	
M3PFBS	131676	1.919817	127975.5	1.928117	103	50 - 150	-0.0083	+/-0.50	
M7PFUnA	834375.1	3.962017	816297.1	3.962017	102	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	113714.2	3.461417	102037.5	3.4614	111	50 - 150	0.0000	+/-0.50	
M5PFPeA	457953.7	1.749417	452209.3	1.749417	101	50 - 150	0.0000	+/-0.50	
M5PFHxA	689194.3	2.605183	677840.8	2.605183	102	50 - 150	0.0000	+/-0.50	
M3PFHxS	96050.94	3.2345	87872.16	3.2345	109	50 - 150	0.0000	+/-0.50	
M4PFHpA	653430.5	3.195017	644405.7	3.203083	101	50 - 150	-0.0081	+/-0.50	
M8PFOA	616305.3	3.4779	606579.3	3.4779	102	50 - 150	0.0000	+/-0.50	
M8PFOS	104790.4	3.660133	98420.23	3.66015	106	50 - 150	0.0000	+/-0.50	
M9PFNA	526292.2	3.661183	499046.1	3.661183	105	50 - 150	0.0000	+/-0.50	
MPFDoA	796532.9	4.09665	803924	4.09665	99	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	211304.5	3.9695	197849.3	3.9695	107	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	230432.4	3.889733	229590	3.889733	100	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S063221-CCV1)			Lab File ID: CAL4.d			Analyzed: 09/13/21 14:07			
M8FOSA	268823.1	4.01255	268823.1	4.01255	100	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	97369.49	2.5543	97369.49	2.5543	100	50 - 150	0.0000	+/-0.50	
M2PFTA	923995.6	4.35405	923995.6	4.35405	100	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	57813.52	3.835017	57813.52	3.835017	100	50 - 150	0.0000	+/-0.50	
MPFBA	448987.7	1.108317	448987.7	1.108317	100	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	158634.6	2.8884	158634.6	2.8884	100	50 - 150	0.0000	+/-0.50	
M6PFDA	492195.1	3.82755	492195.1	3.82755	100	50 - 150	0.0000	+/-0.50	
M3PFBS	125831.8	1.95315	125831.8	1.95315	100	50 - 150	0.0000	+/-0.50	
M7PFUnA	664748.3	3.978017	664748.3	3.978017	100	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	39058.75	3.477367	39058.75	3.477367	100	50 - 150	0.0000	+/-0.50	
M5PFPeA	452931.4	1.7743	452931.4	1.7743	100	50 - 150	0.0000	+/-0.50	
M5PFHxA	662228.1	2.638533	662228.1	2.638533	100	50 - 150	0.0000	+/-0.50	
M3PFHxS	86390.75	3.250667	86390.75	3.250667	100	50 - 150	0.0000	+/-0.50	
M4PFHpA	625485.3	3.219533	625485.3	3.219533	100	50 - 150	0.0000	+/-0.50	
M8PFOA	591354.1	3.485883	591354.1	3.485883	100	50 - 150	0.0000	+/-0.50	
M8PFOS	98693.27	3.676117	98693.27	3.676117	100	50 - 150	0.0000	+/-0.50	
M9PFNA	466596	3.67715	466596	3.67715	100	50 - 150	0.0000	+/-0.50	
MPFDoA	722652.6	4.112633	722652.6	4.112633	100	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	150642.9	3.985483	150642.9	3.985483	100	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	174970.3	3.9059	174970.3	3.9059	100	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Instrument Blank (S063221-IBL1)			Lab File ID: IBLA091321.d			Analyzed: 09/13/21 15:05			
M8FOSA	278048.1	4.01255	268823.1	4.01255	103	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	88424.66	2.5543	97369.49	2.5543	91	50 - 150	0.0000	+/-0.50	
M2PFTA	880727.5	4.345933	923995.6	4.35405	95	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	51508.39	3.835017	57813.52	3.835017	89	50 - 150	0.0000	+/-0.50	
MPFBA	423271.6	1.108317	448987.7	1.108317	94	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	133107.2	2.8884	158634.6	2.8884	84	50 - 150	0.0000	+/-0.50	
M6PFDA	501259	3.82755	492195.1	3.82755	102	50 - 150	0.0000	+/-0.50	
M3PFBS	121197	1.95315	125831.8	1.95315	96	50 - 150	0.0000	+/-0.50	
M7PFUnA	666354.1	3.978017	664748.3	3.978017	100	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	38230.23	3.477367	39058.75	3.477367	98	50 - 150	0.0000	+/-0.50	
M5PFPeA	430746.8	1.7743	452931.4	1.7743	95	50 - 150	0.0000	+/-0.50	
M5PFHxA	628175.4	2.638533	662228.1	2.638533	95	50 - 150	0.0000	+/-0.50	
M3PFHxS	81188.91	3.250667	86390.75	3.250667	94	50 - 150	0.0000	+/-0.50	
M4PFHpA	593815.9	3.219533	625485.3	3.219533	95	50 - 150	0.0000	+/-0.50	
M8PFOA	556792.4	3.493867	591354.1	3.485883	94	50 - 150	0.0080	+/-0.50	
M8PFOS	85979.3	3.676117	98693.27	3.676117	87	50 - 150	0.0000	+/-0.50	
M9PFNA	424213.3	3.67715	466596	3.67715	91	50 - 150	0.0000	+/-0.50	
MPFDoA	637488.5	4.112633	722652.6	4.112633	88	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	134153.9	3.985483	150642.9	3.985483	89	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	156530.9	3.9059	174970.3	3.9059	89	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S063221-CCV2)			Lab File ID: CCVA091321.d			Analyzed: 09/13/21 15:12			
M8FOSA	271094.4	4.01255	268823.1	4.01255	101	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	93344.05	2.5543	97369.49	2.5543	96	50 - 150	0.0000	+/-0.50	
M2PFTA	886846.3	4.35405	923995.6	4.35405	96	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	54916.3	3.827067	57813.52	3.835017	95	50 - 150	-0.0080	+/-0.50	
MPFBA	433804.5	1.100017	448987.7	1.108317	97	50 - 150	-0.0083	+/-0.50	
M3HFPO-DA	125208.9	2.880217	158634.6	2.8884	79	50 - 150	-0.0082	+/-0.50	
M6PFDA	510161.8	3.82755	492195.1	3.82755	104	50 - 150	0.0000	+/-0.50	
M3PFBS	123338.5	1.944683	125831.8	1.95315	98	50 - 150	-0.0085	+/-0.50	
M7PFUnA	664831.2	3.970017	664748.3	3.978017	100	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	42791.28	3.477367	39058.75	3.477367	110	50 - 150	0.0000	+/-0.50	
M5PFPeA	440709.2	1.766017	452931.4	1.7743	97	50 - 150	-0.0083	+/-0.50	
M5PFHxA	636832.6	2.638533	662228.1	2.638533	96	50 - 150	0.0000	+/-0.50	
M3PFHxS	88486.19	3.250667	86390.75	3.250667	102	50 - 150	0.0000	+/-0.50	
M4PFHpA	598368.6	3.219533	625485.3	3.219533	96	50 - 150	0.0000	+/-0.50	
M8PFOA	553917.6	3.485883	591354.1	3.485883	94	50 - 150	0.0000	+/-0.50	
M8PFOS	86611.29	3.676117	98693.27	3.676117	88	50 - 150	0.0000	+/-0.50	
M9PFNA	461539.2	3.67715	466596	3.67715	99	50 - 150	0.0000	+/-0.50	
MPFDoA	662382.3	4.112633	722652.6	4.112633	92	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	136106.9	3.977483	150642.9	3.985483	90	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	173254	3.9059	174970.3	3.9059	99	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Eq Blank (21H1473-09)									
			Lab File ID: 21H1473-09.d			Analyzed: 09/13/21 15:46			
M8FOSA	236673.4	4.01255	271094.4	4.01255	87	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	58758.45	2.5543	93344.05	2.5543	63	50 - 150	0.0000	+/-0.50	
M2PFTA	850683.9	4.345933	886846.3	4.35405	96	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	49193.38	3.82705	54916.3	3.827067	90	50 - 150	0.0000	+/-0.50	
MPFBA	439108.2	1.108317	433804.5	1.100017	101	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	151662.8	2.880217	125208.9	2.880217	121	50 - 150	0.0000	+/-0.50	
M6PFDA	514812.3	3.82755	510161.8	3.82755	101	50 - 150	0.0000	+/-0.50	
M3PFBS	112684.6	1.95315	123338.5	1.944683	91	50 - 150	0.0085	+/-0.50	
M7PFUnA	734479.5	3.970017	664831.2	3.970017	110	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	34933.68	3.477367	42791.28	3.477367	82	50 - 150	0.0000	+/-0.50	
M5PFPeA	434511.3	1.7743	440709.2	1.766017	99	50 - 150	0.0083	+/-0.50	
M5PFHxA	617363.6	2.638533	636832.6	2.638533	97	50 - 150	0.0000	+/-0.50	
M3PFHxS	80965.18	3.250667	88486.19	3.250667	92	50 - 150	0.0000	+/-0.50	
M4PFHpA	585844.4	3.21145	598368.6	3.219533	98	50 - 150	-0.0081	+/-0.50	
M8PFOA	528065.8	3.485883	553917.6	3.485883	95	50 - 150	0.0000	+/-0.50	
M8PFOS	84493.51	3.676117	86611.29	3.676117	98	50 - 150	0.0000	+/-0.50	
M9PFNA	436310.5	3.67715	461539.2	3.67715	95	50 - 150	0.0000	+/-0.50	
MPFDoA	719771.5	4.112633	662382.3	4.112633	109	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	157538	3.977483	136106.9	3.977483	116	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	169607	3.9059	173254	3.9059	98	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Rinsate (21H1473-11)									
			Lab File ID: 21H1473-11.d			Analyzed: 09/13/21 15:53			
M8FOSA	22046.13	4.01255	271094.4	4.01255	8	50 - 150	0.0000	+/-0.50	*
M2-4:2FTS	46786.23	2.5543	93344.05	2.5543	50	50 - 150	0.0000	+/-0.50	
M2PFTA	4465.603	4.345933	886846.3	4.35405	1	50 - 150	-0.0081	+/-0.50	*
M2-8:2FTS	22278.79	3.82705	54916.3	3.827067	41	50 - 150	0.0000	+/-0.50	*
MPFBA	472076.7	1.108317	433804.5	1.100017	109	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	180920.8	2.880217	125208.9	2.880217	144	50 - 150	0.0000	+/-0.50	
M6PFDA	231193	3.82755	510161.8	3.82755	45	50 - 150	0.0000	+/-0.50	*
M3PFBS	122826.7	1.95315	123338.5	1.944683	100	50 - 150	0.0085	+/-0.50	
M7PFUnA	184447.6	3.970017	664831.2	3.970017	28	50 - 150	0.0000	+/-0.50	*
M2-6:2FTS	30402.99	3.477367	42791.28	3.477367	71	50 - 150	0.0000	+/-0.50	
M5PFPeA	451199.9	1.7743	440709.2	1.766017	102	50 - 150	0.0083	+/-0.50	
M5PFHxA	625839.1	2.638533	636832.6	2.638533	98	50 - 150	0.0000	+/-0.50	
M3PFHxS	76882.95	3.250667	88486.19	3.250667	87	50 - 150	0.0000	+/-0.50	
M4PFHpA	563504.1	3.21145	598368.6	3.219533	94	50 - 150	-0.0081	+/-0.50	
M8PFOA	482890.9	3.485883	553917.6	3.485883	87	50 - 150	0.0000	+/-0.50	
M8PFOS	49378.76	3.676117	86611.29	3.676117	57	50 - 150	0.0000	+/-0.50	
M9PFNA	299571.9	3.67715	461539.2	3.67715	65	50 - 150	0.0000	+/-0.50	
MPFDoA	79676.23	4.112633	662382.3	4.112633	12	50 - 150	0.0000	+/-0.50	*
d5-NEtFOSAA	39753.56	3.977483	136106.9	3.977483	29	50 - 150	0.0000	+/-0.50	*
d3-NMeFOSAA	58666.74	3.9059	173254	3.9059	34	50 - 150	0.0000	+/-0.50	*

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S063221-CCV3)			Lab File ID: CCVB091321.d			Analyzed: 09/13/21 17:46			
M8FOSA	285034.4	4.01255	271094.4	4.01255	105	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	98554.95	2.5461	93344.05	2.5543	106	50 - 150	-0.0082	+/-0.50	
M2PFTA	873413.3	4.345933	886846.3	4.35405	98	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	56515.7	3.827067	54916.3	3.827067	103	50 - 150	0.0000	+/-0.50	
MPFBA	450992.8	1.100017	433804.5	1.100017	104	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	126499.2	2.880217	125208.9	2.880217	101	50 - 150	0.0000	+/-0.50	
M6PFDA	499785	3.82755	510161.8	3.82755	98	50 - 150	0.0000	+/-0.50	
M3PFBS	125925.1	1.944683	123338.5	1.944683	102	50 - 150	0.0000	+/-0.50	
M7PFUnA	656838.8	3.970017	664831.2	3.970017	99	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	42846.62	3.477383	42791.28	3.477367	100	50 - 150	0.0000	+/-0.50	
M5PFPeA	456879.8	1.766017	440709.2	1.766017	104	50 - 150	0.0000	+/-0.50	
M5PFHxA	659728.3	2.629833	636832.6	2.638533	104	50 - 150	-0.0087	+/-0.50	
M3PFHxS	85113.55	3.242583	88486.19	3.250667	96	50 - 150	-0.0081	+/-0.50	
M4PFHpA	608457.8	3.21145	598368.6	3.219533	102	50 - 150	-0.0081	+/-0.50	
M8PFOA	545529	3.485883	553917.6	3.485883	98	50 - 150	0.0000	+/-0.50	
M8PFOS	92429.07	3.676117	86611.29	3.676117	107	50 - 150	0.0000	+/-0.50	
M9PFNA	460378.5	3.67715	461539.2	3.67715	100	50 - 150	0.0000	+/-0.50	
MPFDoA	645100.7	4.104633	662382.3	4.112633	97	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	143745	3.977483	136106.9	3.977483	106	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	171815.3	3.9059	173254	3.9059	99	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S063221-CCV4)			Lab File ID: CCVC091321.d			Analyzed: 09/13/21 19:34			
M8FOSA	279351.2	4.01255	285034.4	4.01255	98	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	88033.31	2.52145	98554.95	2.5461	89	50 - 150	-0.0246	+/-0.50	
M2PFtA	899192.3	4.3378	873413.3	4.345933	103	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	44802.8	3.818733	56515.7	3.827067	79	50 - 150	-0.0083	+/-0.50	
MPFBA	446733.9	1.0917	450992.8	1.100017	99	50 - 150	-0.0083	+/-0.50	
M3HFPO-DA	134774.7	2.855667	126499.2	2.880217	107	50 - 150	-0.0246	+/-0.50	
M6PFDA	505606.4	3.81925	499785	3.82755	101	50 - 150	-0.0083	+/-0.50	
M3PFBS	125654.6	1.919817	125925.1	1.944683	100	50 - 150	-0.0249	+/-0.50	
M7PFUnA	709175.8	3.962017	656838.8	3.970017	108	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	36127.42	3.461417	42846.62	3.477383	84	50 - 150	-0.0160	+/-0.50	
M5PFPeA	437150.8	1.749417	456879.8	1.766017	96	50 - 150	-0.0166	+/-0.50	
M5PFHxA	669407.4	2.605183	659728.3	2.629833	101	50 - 150	-0.0247	+/-0.50	
M3PFHxS	86011.48	3.2345	85113.55	3.242583	101	50 - 150	-0.0081	+/-0.50	
M4PFHpA	623645.9	3.195017	608457.8	3.21145	102	50 - 150	-0.0164	+/-0.50	
M8PFOA	552648.4	3.4779	545529	3.485883	101	50 - 150	-0.0080	+/-0.50	
M8PFOS	90360.88	3.668133	92429.07	3.676117	98	50 - 150	-0.0080	+/-0.50	
M9PFNA	445292.8	3.669167	460378.5	3.67715	97	50 - 150	-0.0080	+/-0.50	
MPFDoA	668401.7	4.09665	645100.7	4.104633	104	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	148575.8	3.9695	143745	3.977483	103	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	164398.9	3.889733	171815.3	3.9059	96	50 - 150	-0.0162	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S063221-CCV5)									
			Lab File ID: CCVD091321.d			Analyzed: 09/13/21 21:15			
M8FOSA	286717.4	4.01255	279351.2	4.01255	103	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	89570.16	2.52145	88033.31	2.52145	102	50 - 150	0.0000	+/-0.50	
M2PFTA	914794.6	4.3378	899192.3	4.3378	102	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	46479.77	3.818733	44802.8	3.818733	104	50 - 150	0.0000	+/-0.50	
MPFBA	442465	1.100017	446733.9	1.0917	99	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	134384.5	2.855667	134774.7	2.855667	100	50 - 150	0.0000	+/-0.50	
M6PFDA	503643.7	3.81925	505606.4	3.81925	100	50 - 150	0.0000	+/-0.50	
M3PFBS	125439.7	1.919817	125654.6	1.919817	100	50 - 150	0.0000	+/-0.50	
M7PFUnA	661869	3.962017	709175.8	3.962017	93	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	38938.98	3.4614	36127.42	3.461417	108	50 - 150	0.0000	+/-0.50	
M5PFPeA	444322.5	1.749417	437150.8	1.749417	102	50 - 150	0.0000	+/-0.50	
M5PFHxA	659566.9	2.605183	669407.4	2.605183	99	50 - 150	0.0000	+/-0.50	
M3PFHxS	86608.88	3.2345	86011.48	3.2345	101	50 - 150	0.0000	+/-0.50	
M4PFHpA	625475.2	3.203083	623645.9	3.195017	100	50 - 150	0.0081	+/-0.50	
M8PFOA	555999.2	3.4779	552648.4	3.4779	101	50 - 150	0.0000	+/-0.50	
M8PFOS	94289.81	3.668133	90360.88	3.668133	104	50 - 150	0.0000	+/-0.50	
M9PFNA	431407.9	3.661183	445292.8	3.669167	97	50 - 150	-0.0080	+/-0.50	
MPFDoA	649117.2	4.096633	668401.7	4.09665	97	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	143641	3.969483	148575.8	3.9695	97	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	157429.5	3.889733	164398.9	3.889733	96	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S063221-CCV6)			Lab File ID: CCVE091321.d			Analyzed: 09/13/21 23:03			
M8FOSA	267483.5	4.01255	286717.4	4.01255	93	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	97299.22	2.505033	89570.16	2.52145	109	50 - 150	-0.0164	+/-0.50	
M2PFTA	915834.9	4.329683	914794.6	4.3378	100	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	54735.97	3.810767	46479.77	3.818733	118	50 - 150	-0.0080	+/-0.50	
MPFBA	463547.5	1.0917	442465	1.100017	105	50 - 150	-0.0083	+/-0.50	
M3HFPO-DA	138747.7	2.847483	134384.5	2.855667	103	50 - 150	-0.0082	+/-0.50	
M6PFDA	518461.7	3.811283	503643.7	3.81925	103	50 - 150	-0.0080	+/-0.50	
M3PFBS	127968	1.911533	125439.7	1.919817	102	50 - 150	-0.0083	+/-0.50	
M7PFUnA	674581.8	3.954033	661869	3.962017	102	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	40626.43	3.461417	38938.98	3.4614	104	50 - 150	0.0000	+/-0.50	
M5PFPeA	451188.2	1.731383	444322.5	1.749417	102	50 - 150	-0.0180	+/-0.50	
M5PFHxA	674131.8	2.588767	659566.9	2.605183	102	50 - 150	-0.0164	+/-0.50	
M3PFHxS	88178.61	3.226417	86608.88	3.2345	102	50 - 150	-0.0081	+/-0.50	
M4PFHpA	634248.4	3.195017	625475.2	3.203083	101	50 - 150	-0.0081	+/-0.50	
M8PFOA	574460.8	3.469917	555999.2	3.4779	103	50 - 150	-0.0080	+/-0.50	
M8PFOS	98166.38	3.660133	94289.81	3.668133	104	50 - 150	-0.0080	+/-0.50	
M9PFNA	480079	3.661183	431407.9	3.661183	111	50 - 150	0.0000	+/-0.50	
MPFDoA	667457.6	4.08865	649117.2	4.096633	103	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	144850.5	3.9615	143641	3.969483	101	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	176453.3	3.889733	157429.5	3.889733	112	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S063221-CCV7)			Lab File ID: CCVF091321.d			Analyzed: 09/14/21 00:15			
M8FOSA	305970.7	4.01255	267483.5	4.01255	114	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	75130.44	2.51325	97299.22	2.505033	77	50 - 150	0.0082	+/-0.50	
M2PFtA	913601.5	4.329683	915834.9	4.329683	100	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	46031.51	3.818733	54735.97	3.810767	84	50 - 150	0.0080	+/-0.50	
MPFBA	454389	1.0917	463547.5	1.0917	98	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	147827.1	2.847483	138747.7	2.847483	107	50 - 150	0.0000	+/-0.50	
M6PFDA	524417.5	3.811283	518461.7	3.811283	101	50 - 150	0.0000	+/-0.50	
M3PFBS	129046.6	1.919817	127968	1.911533	101	50 - 150	0.0083	+/-0.50	
M7PFUnA	700586.3	3.954033	674581.8	3.954033	104	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	34799.93	3.461417	40626.43	3.461417	86	50 - 150	0.0000	+/-0.50	
M5PFPeA	451409.6	1.741117	451188.2	1.731383	100	50 - 150	0.0097	+/-0.50	
M5PFHxA	672616.8	2.596983	674131.8	2.588767	100	50 - 150	0.0082	+/-0.50	
M3PFHxS	85614.77	3.226417	88178.61	3.226417	97	50 - 150	0.0000	+/-0.50	
M4PFHpA	622380.2	3.195017	634248.4	3.195017	98	50 - 150	0.0000	+/-0.50	
M8PFOA	592604.5	3.4779	574460.8	3.469917	103	50 - 150	0.0080	+/-0.50	
M8PFOS	94503.42	3.660133	98166.38	3.660133	96	50 - 150	0.0000	+/-0.50	
M9PFNA	453589.7	3.661183	480079	3.661183	94	50 - 150	0.0000	+/-0.50	
MPFDoA	680279.9	4.096633	667457.6	4.08865	102	50 - 150	0.0080	+/-0.50	
d5-NEtFOSAA	146503.4	3.9615	144850.5	3.9615	101	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	157853.1	3.889733	176453.3	3.889733	89	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Initial Cal Check (S063223-ICV1)			Lab File ID: ICV1.d			Analyzed: 09/13/21 14:43			
M8FOSA	315237.9	4.01255	268823.1	4.01255	117	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	109050.8	2.5543	97369.49	2.5543	112	50 - 150	0.0000	+/-0.50	
M2PFtA	1005071	4.35405	923995.6	4.35405	109	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	62946.31	3.835017	57813.52	3.835017	109	50 - 150	0.0000	+/-0.50	
MPFBA	494264.8	1.108317	448987.7	1.108317	110	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	145586.3	2.880217	158634.6	2.8884	92	50 - 150	-0.0082	+/-0.50	
M6PFDA	530390.5	3.82755	492195.1	3.82755	108	50 - 150	0.0000	+/-0.50	
M3PFBS	137853.9	1.944683	125831.8	1.95315	110	50 - 150	-0.0085	+/-0.50	
M7PFUnA	723855.7	3.978017	664748.3	3.978017	109	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	48480.49	3.477383	39058.75	3.477367	124	50 - 150	0.0000	+/-0.50	
M5PFPeA	499049.4	1.766017	452931.4	1.7743	110	50 - 150	-0.0083	+/-0.50	
M5PFHxA	726761.9	2.638533	662228.1	2.638533	110	50 - 150	0.0000	+/-0.50	
M3PFHxS	97748.78	3.250667	86390.75	3.250667	113	50 - 150	0.0000	+/-0.50	
M4PFHpA	670773.2	3.219533	625485.3	3.219533	107	50 - 150	0.0000	+/-0.50	
M8PFOA	625746	3.485883	591354.1	3.485883	106	50 - 150	0.0000	+/-0.50	
M8PFOS	105569.2	3.676117	98693.27	3.676117	107	50 - 150	0.0000	+/-0.50	
M9PFNA	501508.1	3.67715	466596	3.67715	107	50 - 150	0.0000	+/-0.50	
MPFDoA	757977.9	4.112633	722652.6	4.112633	105	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	161622.7	3.985483	150642.9	3.985483	107	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	178184.3	3.9059	174970.3	3.9059	102	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Instrument Blank (S063227-IBL1)									
			Lab File ID: IBL1091321.d			Analyzed: 09/13/21 11:52			
M8FOSA	261562.8	4.01255	268823.1	4.01255	97	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	75954.97	2.562517	97369.49	2.5543	78	50 - 150	0.0082	+/-0.50	
M2PFTA	824013.4	4.35405	923995.6	4.35405	89	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	41521.97	3.835017	57813.52	3.835017	72	50 - 150	0.0000	+/-0.50	
MPFBA	407426.2	1.108317	448987.7	1.108317	91	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	125464.5	2.8884	158634.6	2.8884	79	50 - 150	0.0000	+/-0.50	
M6PFDA	450960.7	3.8355	492195.1	3.82755	92	50 - 150	0.0080	+/-0.50	
M3PFBS	115201	1.95315	125831.8	1.95315	92	50 - 150	0.0000	+/-0.50	
M7PFUnA	601896.1	3.978017	664748.3	3.978017	91	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	35567.27	3.48535	39058.75	3.477367	91	50 - 150	0.0080	+/-0.50	
M5PFPeA	417644	1.7743	452931.4	1.7743	92	50 - 150	0.0000	+/-0.50	
M5PFHxA	608479.3	2.646767	662228.1	2.638533	92	50 - 150	0.0082	+/-0.50	
M3PFHxS	79766.79	3.250667	86390.75	3.250667	92	50 - 150	0.0000	+/-0.50	
M4PFHpA	569920.1	3.219533	625485.3	3.219533	91	50 - 150	0.0000	+/-0.50	
M8PFOA	509998.7	3.493867	591354.1	3.485883	86	50 - 150	0.0080	+/-0.50	
M8PFOS	83101	3.676117	98693.27	3.676117	84	50 - 150	0.0000	+/-0.50	
M9PFNA	394599.8	3.67715	466596	3.67715	85	50 - 150	0.0000	+/-0.50	
MPFDoA	612807.1	4.112633	722652.6	4.112633	85	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	128543.7	3.985483	150642.9	3.985483	85	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	153206	3.9139	174970.3	3.9059	88	50 - 150	0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S063227-CCV1)			Lab File ID: CAL4.d			Analyzed: 09/13/21 14:07			
M8FOSA	268823.1	4.01255	268823.1	4.01255	100	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	97369.49	2.5543	97369.49	2.5543	100	50 - 150	0.0000	+/-0.50	
M2PFTA	923995.6	4.35405	923995.6	4.35405	100	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	57813.52	3.835017	57813.52	3.835017	100	50 - 150	0.0000	+/-0.50	
MPFBA	448987.7	1.108317	448987.7	1.108317	100	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	158634.6	2.8884	158634.6	2.8884	100	50 - 150	0.0000	+/-0.50	
M6PFDA	492195.1	3.82755	492195.1	3.82755	100	50 - 150	0.0000	+/-0.50	
M3PFBS	125831.8	1.95315	125831.8	1.95315	100	50 - 150	0.0000	+/-0.50	
M7PFUnA	664748.3	3.978017	664748.3	3.978017	100	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	39058.75	3.477367	39058.75	3.477367	100	50 - 150	0.0000	+/-0.50	
M5PFPeA	452931.4	1.7743	452931.4	1.7743	100	50 - 150	0.0000	+/-0.50	
M5PFHxA	662228.1	2.638533	662228.1	2.638533	100	50 - 150	0.0000	+/-0.50	
M3PFHxS	86390.75	3.250667	86390.75	3.250667	100	50 - 150	0.0000	+/-0.50	
M4PFHpA	625485.3	3.219533	625485.3	3.219533	100	50 - 150	0.0000	+/-0.50	
M8PFOA	591354.1	3.485883	591354.1	3.485883	100	50 - 150	0.0000	+/-0.50	
M8PFOS	98693.27	3.676117	98693.27	3.676117	100	50 - 150	0.0000	+/-0.50	
M9PFNA	466596	3.67715	466596	3.67715	100	50 - 150	0.0000	+/-0.50	
MPFDoA	722652.6	4.112633	722652.6	4.112633	100	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	150642.9	3.985483	150642.9	3.985483	100	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	174970.3	3.9059	174970.3	3.9059	100	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S063227-CCV2)			Lab File ID: CCVD091321.d			Analyzed: 09/13/21 21:15			
M8FOSA	286717.4	4.01255	268823.1	4.01255	107	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	89570.16	2.52145	97369.49	2.5543	92	50 - 150	-0.0328	+/-0.50	
M2PFTA	914794.6	4.3378	923995.6	4.35405	99	50 - 150	-0.0163	+/-0.50	
M2-8:2FTS	46479.77	3.818733	57813.52	3.835017	80	50 - 150	-0.0163	+/-0.50	
MPFBA	442465	1.100017	448987.7	1.108317	99	50 - 150	-0.0083	+/-0.50	
M3HFPO-DA	134384.5	2.855667	158634.6	2.8884	85	50 - 150	-0.0327	+/-0.50	
M6PFDA	503643.7	3.81925	492195.1	3.82755	102	50 - 150	-0.0083	+/-0.50	
M3PFBS	125439.7	1.919817	125831.8	1.95315	100	50 - 150	-0.0333	+/-0.50	
M7PFUnA	661869	3.962017	664748.3	3.978017	100	50 - 150	-0.0160	+/-0.50	
M2-6:2FTS	38938.98	3.4614	39058.75	3.477367	100	50 - 150	-0.0160	+/-0.50	
M5PFPeA	444322.5	1.749417	452931.4	1.7743	98	50 - 150	-0.0249	+/-0.50	
M5PFHxA	659566.9	2.605183	662228.1	2.638533	100	50 - 150	-0.0334	+/-0.50	
M3PFHxS	86608.88	3.2345	86390.75	3.250667	100	50 - 150	-0.0162	+/-0.50	
M4PFHpA	625475.2	3.203083	625485.3	3.219533	100	50 - 150	-0.0165	+/-0.50	
M8PFOA	555999.2	3.4779	591354.1	3.485883	94	50 - 150	-0.0080	+/-0.50	
M8PFOS	94289.81	3.668133	98693.27	3.676117	96	50 - 150	-0.0080	+/-0.50	
M9PFNA	431407.9	3.661183	466596	3.67715	92	50 - 150	-0.0160	+/-0.50	
MPFDoA	649117.2	4.096633	722652.6	4.112633	90	50 - 150	-0.0160	+/-0.50	
d5-NEtFOSAA	143641	3.969483	150642.9	3.985483	95	50 - 150	-0.0160	+/-0.50	
d3-NMeFOSAA	157429.5	3.889733	174970.3	3.9059	90	50 - 150	-0.0162	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B289928-BS1)									
			Lab File ID: B289928-BS1.d			Analyzed: 09/13/21 21:22			
M8FOSA	303712.4	4.01255	286717.4	4.01255	106	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	100532.5	2.52145	89570.16	2.52145	112	50 - 150	0.0000	+/-0.50	
M2PFTA	1005074	4.3378	914794.6	4.3378	110	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	51430.6	3.818733	46479.77	3.818733	111	50 - 150	0.0000	+/-0.50	
MPFBA	497490.1	1.100017	442465	1.100017	112	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	150985.3	2.855667	134384.5	2.855667	112	50 - 150	0.0000	+/-0.50	
M6PFDA	559820.1	3.81925	503643.7	3.81925	111	50 - 150	0.0000	+/-0.50	
M3PFBS	139151.8	1.928117	125439.7	1.919817	111	50 - 150	0.0083	+/-0.50	
M7PFUnA	765578	3.962017	661869	3.962017	116	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	45623.13	3.461417	38938.98	3.4614	117	50 - 150	0.0000	+/-0.50	
M5PFPeA	495619.1	1.749417	444322.5	1.749417	112	50 - 150	0.0000	+/-0.50	
M5PFHxA	731424.9	2.605183	659566.9	2.605183	111	50 - 150	0.0000	+/-0.50	
M3PFHxS	95435.73	3.2345	86608.88	3.2345	110	50 - 150	0.0000	+/-0.50	
M4PFHpA	689429.1	3.203083	625475.2	3.203083	110	50 - 150	0.0000	+/-0.50	
M8PFOA	628539.6	3.4779	555999.2	3.4779	113	50 - 150	0.0000	+/-0.50	
M8PFOS	101223.7	3.668133	94289.81	3.668133	107	50 - 150	0.0000	+/-0.50	
M9PFNA	553703.9	3.669167	431407.9	3.661183	128	50 - 150	0.0080	+/-0.50	
MPFDoA	846981.6	4.096633	649117.2	4.096633	130	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	146204.5	3.9695	143641	3.969483	102	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	185572.5	3.889733	157429.5	3.889733	118	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B289928-BLK1) Lab File ID: B289928-BLK1.d Analyzed: 09/13/21 21:30									
M8FOSA	256271.7	4.01255	286717.4	4.01255	89	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	89983.42	2.52145	89570.16	2.52145	100	50 - 150	0.0000	+/-0.50	
M2PFTA	888227.4	4.3378	914794.6	4.3378	97	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	44987.46	3.818733	46479.77	3.818733	97	50 - 150	0.0000	+/-0.50	
MPFBA	441563.7	1.100017	442465	1.100017	100	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	134780.7	2.855667	134384.5	2.855667	100	50 - 150	0.0000	+/-0.50	
M6PFDA	478307.9	3.81925	503643.7	3.81925	95	50 - 150	0.0000	+/-0.50	
M3PFBS	124607.5	1.919817	125439.7	1.919817	99	50 - 150	0.0000	+/-0.50	
M7PFUnA	696378.4	3.962017	661869	3.962017	105	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	40080.6	3.4614	38938.98	3.4614	103	50 - 150	0.0000	+/-0.50	
M5PFPeA	439332.2	1.749417	444322.5	1.749417	99	50 - 150	0.0000	+/-0.50	
M5PFHxA	644653.1	2.605183	659566.9	2.605183	98	50 - 150	0.0000	+/-0.50	
M3PFHxS	85844.38	3.2345	86608.88	3.2345	99	50 - 150	0.0000	+/-0.50	
M4PFHpA	619791.3	3.203083	625475.2	3.203083	99	50 - 150	0.0000	+/-0.50	
M8PFOA	587522.2	3.4779	555999.2	3.4779	106	50 - 150	0.0000	+/-0.50	
M8PFOS	100905	3.668133	94289.81	3.668133	107	50 - 150	0.0000	+/-0.50	
M9PFNA	476891.5	3.661183	431407.9	3.661183	111	50 - 150	0.0000	+/-0.50	
MPFDoA	670411.8	4.096633	649117.2	4.096633	103	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	138178.4	3.969483	143641	3.969483	96	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	162335.3	3.889733	157429.5	3.889733	103	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
S-2 (21H1473-02RE1)									
			Lab File ID: 21H1473-02RE1.d			Analyzed: 09/13/21 21:51			
M8FOSA	307251.9	4.01255	286717.4	4.01255	107	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	96552.79	2.52145	89570.16	2.52145	108	50 - 150	0.0000	+/-0.50	
M2PFTA	996225.9	4.3378	914794.6	4.3378	109	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	55133.82	3.818733	46479.77	3.818733	119	50 - 150	0.0000	+/-0.50	
MPFBA	472674	1.100017	442465	1.100017	107	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	143709	2.855667	134384.5	2.855667	107	50 - 150	0.0000	+/-0.50	
M6PFDA	564223.8	3.81925	503643.7	3.81925	112	50 - 150	0.0000	+/-0.50	
M3PFBS	138662.5	1.928117	125439.7	1.919817	111	50 - 150	0.0083	+/-0.50	
M7PFUnA	791140.6	3.962017	661869	3.962017	120	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	42703.01	3.4614	38938.98	3.4614	110	50 - 150	0.0000	+/-0.50	
M5PFPeA	473954.8	1.749417	444322.5	1.749417	107	50 - 150	0.0000	+/-0.50	
M5PFHxA	689942.9	2.605183	659566.9	2.605183	105	50 - 150	0.0000	+/-0.50	
M3PFHxS	95132.19	3.2345	86608.88	3.2345	110	50 - 150	0.0000	+/-0.50	
M4PFHpA	681353.6	3.195017	625475.2	3.203083	109	50 - 150	-0.0081	+/-0.50	
M8PFOA	589351	3.4779	555999.2	3.4779	106	50 - 150	0.0000	+/-0.50	
M8PFOS	96955.31	3.660133	94289.81	3.668133	103	50 - 150	-0.0080	+/-0.50	
M9PFNA	508692.4	3.661183	431407.9	3.661183	118	50 - 150	0.0000	+/-0.50	
MPFDoA	759598.3	4.096633	649117.2	4.096633	117	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	142809.3	3.969483	143641	3.969483	99	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	180761.2	3.889733	157429.5	3.889733	115	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S063227-CCV3)									
			Lab File ID: CCVE091321.d			Analyzed: 09/13/21 23:03			
M8FOSA	267483.5	4.01255	286717.4	4.01255	93	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	97299.22	2.505033	89570.16	2.52145	109	50 - 150	-0.0164	+/-0.50	
M2PFTA	915834.9	4.329683	914794.6	4.3378	100	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	54735.97	3.810767	46479.77	3.818733	118	50 - 150	-0.0080	+/-0.50	
MPFBA	463547.5	1.0917	442465	1.100017	105	50 - 150	-0.0083	+/-0.50	
M3HFPO-DA	138747.7	2.847483	134384.5	2.855667	103	50 - 150	-0.0082	+/-0.50	
M6PFDA	518461.7	3.811283	503643.7	3.81925	103	50 - 150	-0.0080	+/-0.50	
M3PFBS	127968	1.911533	125439.7	1.919817	102	50 - 150	-0.0083	+/-0.50	
M7PFUnA	674581.8	3.954033	661869	3.962017	102	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	40626.43	3.461417	38938.98	3.4614	104	50 - 150	0.0000	+/-0.50	
M5PFPeA	451188.2	1.731383	444322.5	1.749417	102	50 - 150	-0.0180	+/-0.50	
M5PFHxA	674131.8	2.588767	659566.9	2.605183	102	50 - 150	-0.0164	+/-0.50	
M3PFHxS	88178.61	3.226417	86608.88	3.2345	102	50 - 150	-0.0081	+/-0.50	
M4PFHpA	634248.4	3.195017	625475.2	3.203083	101	50 - 150	-0.0081	+/-0.50	
M8PFOA	574460.8	3.469917	555999.2	3.4779	103	50 - 150	-0.0080	+/-0.50	
M8PFOS	98166.38	3.660133	94289.81	3.668133	104	50 - 150	-0.0080	+/-0.50	
M9PFNA	480079	3.661183	431407.9	3.661183	111	50 - 150	0.0000	+/-0.50	
MPFDoA	667457.6	4.08865	649117.2	4.096633	103	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	144850.5	3.9615	143641	3.969483	101	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	176453.3	3.889733	157429.5	3.889733	112	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S063227-CCV4)			Lab File ID: CCVF091321.d			Analyzed: 09/14/21 00:15			
M8FOSA	305970.7	4.01255	267483.5	4.01255	114	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	75130.44	2.51325	97299.22	2.505033	77	50 - 150	0.0082	+/-0.50	
M2PFTA	913601.5	4.329683	915834.9	4.329683	100	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	46031.51	3.818733	54735.97	3.810767	84	50 - 150	0.0080	+/-0.50	
MPFBA	454389	1.0917	463547.5	1.0917	98	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	147827.1	2.847483	138747.7	2.847483	107	50 - 150	0.0000	+/-0.50	
M6PFDA	524417.5	3.811283	518461.7	3.811283	101	50 - 150	0.0000	+/-0.50	
M3PFBS	129046.6	1.919817	127968	1.911533	101	50 - 150	0.0083	+/-0.50	
M7PFUnA	700586.3	3.954033	674581.8	3.954033	104	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	34799.93	3.461417	40626.43	3.461417	86	50 - 150	0.0000	+/-0.50	
M5PFPeA	451409.6	1.741117	451188.2	1.731383	100	50 - 150	0.0097	+/-0.50	
M5PFHxA	672616.8	2.596983	674131.8	2.588767	100	50 - 150	0.0082	+/-0.50	
M3PFHxS	85614.77	3.226417	88178.61	3.226417	97	50 - 150	0.0000	+/-0.50	
M4PFHpA	622380.2	3.195017	634248.4	3.195017	98	50 - 150	0.0000	+/-0.50	
M8PFOA	592604.5	3.4779	574460.8	3.469917	103	50 - 150	0.0080	+/-0.50	
M8PFOS	94503.42	3.660133	98166.38	3.660133	96	50 - 150	0.0000	+/-0.50	
M9PFNA	453589.7	3.661183	480079	3.661183	94	50 - 150	0.0000	+/-0.50	
MPFDoA	680279.9	4.096633	667457.6	4.08865	102	50 - 150	0.0080	+/-0.50	
d5-NEtFOSAA	146503.4	3.9615	144850.5	3.9615	101	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	157853.1	3.889733	176453.3	3.889733	89	50 - 150	0.0000	+/-0.50	

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S063145-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	519	0.8546449	0.8959625		3.8	30
Perfluorobutanesulfonic acid (PFBS)	A	444	465	1.007311	1.063296		4.7	30
Perfluoropentanoic acid (PFPeA)	A	500	498	0.9389823	0.9478638		-0.3	30
Perfluorohexanoic acid (PFHxA)	A	500	536	0.8564872	0.9241851		7.2	30
11Cl-PF3OUdS (F53B Minor)	A	472	493	2.048636	2.192827		4.6	30
9Cl-PF3ONS (F53B Major)	A	466	542	4.459666	4.696981		16.2	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	501	1.580113	1.734212		6.1	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	411	0.1501413	0.1209989		-17.7	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	541	0.8733067	1.183471		12.7	30
Perfluorodecanoic acid (PFDA)	A	500	518	0.8931719	0.9704664		3.6	30
Perfluorododecanoic acid (PFDoA)	A	500	503	0.9030851	0.9659852		0.7	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	419	6.620525	6.327465		-5.9	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	461	0.5239373	0.5216293		-3.2	30
N-EtFOSAA	A	500	534	0.8606614	0.9295077		6.9	30
N-MeFOSAA	A	500	623	0.8138191	1.003038		24.6	30
Perfluorotetradecanoic acid (PFTA)	A	500	540	0.9267805	1.030436		8.1	30
Perfluorotridecanoic acid (PFTrDA)	A	500	500	1.038657	1.103212		0.03	30
Perfluorodecanesulfonic acid (PFDS)	A	482	555	0.6004454	0.6427981		15.2	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	527	1.098446	1.350267		12.7	30
Perfluorooctanesulfonamide (FOSA)	A	500	497	0.8380831	0.8234574		-0.5	30
Perfluorononanesulfonic acid (PFNS)	A	481	470	0.3563489	0.3629995		-2.3	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	514	0.3876955	0.4127552		2.9	30
Perfluoro-1-butanesulfonamide (FBSA)	A	500	538	0.3601304	0.3875063		7.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	427	0.9718027	0.9099853		-6.6	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	492	0.6672115	0.6818391		-1.6	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	489	1.032492	1.053659		-2.2	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	477	0.9799093	1.088254		0.3	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	485	1.06916	1.111205		3.1	30
Perfluoroundecanoic acid (PFUnA)	A	500	554	0.8649995	0.9883148		10.8	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	491	0.5878176	0.6034425		-1.7	30
Perfluoroheptanoic acid (PFHpA)	A	500	553	0.9184038	1.033271		10.6	30
Perfluorooctanoic acid (PFOA)	A	500	482	0.9573613	0.9017713		-3.6	30
Perfluorooctanesulfonic acid (PFOS)	A	464	477	0.9449598	0.9455039		2.7	30
Perfluorononanoic acid (PFNA)	A	500	484	0.9510789	0.948118		-3.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-466 PFAS

S063145-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2840	0.8546449	0.9824459		13.8	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2480	1.007311	1.132537		11.6	30
Perfluoropentanoic acid (PFPeA)	A	2500	2740	0.9389823	1.043444		9.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2830	0.8564872	0.9757882		13.2	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2840	2.048636	2.525043		20.2	30
9Cl-PF3ONS (F53B Major)	A	2330	3230	4.459666	5.687805		38.6	30 *
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2680	1.580113	1.856426		13.6	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2230	0.1501413	0.1315163		-10.9	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2780	0.8733067	1.192109		15.7	30
Perfluorodecanoic acid (PFDA)	A	2500	3110	0.8931719	1.163336		24.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2940	0.9030851	1.129825		17.7	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2320	6.620525	7.050091		4.3	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2860	0.5239373	0.644963		20.2	30
N-EtFOSAA	A	2500	2890	0.8606614	1.004172		15.5	30
N-MeFOSAA	A	2500	2880	0.8138191	0.9257103		15.0	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2630	0.9267805	1.002485		5.1	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2590	1.038657	1.142133		3.7	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2730	1.098446	1.377067		16.8	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	3020	0.6004454	0.6989605		25.3	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2780	0.8380831	0.9198845		11.1	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2850	0.3563489	0.439532		18.7	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2890	0.3876955	0.4630785		15.4	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2920	0.3601304	0.4203823		16.8	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2640	0.9718027	1.127641		15.7	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2730	0.6672115	0.7569219		9.0	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2670	1.032492	1.153467		6.9	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2600	0.9799093	1.168207		9.3	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2590	1.06916	1.18836		10.3	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2500	0.8649995	0.8926745		0.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2640	0.5878176	0.6472731		5.4	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2780	0.9184038	1.037646		11.2	30
Perfluorooctanoic acid (PFOA)	A	2500	2840	0.9573613	1.062618		13.6	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2850	0.9449598	1.129888		22.8	30
Perfluorononanoic acid (PFNA)	A	2500	2720	0.9510789	1.064414		8.6	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S063145-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2810	0.8546449	0.9713253		12.5	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2490	1.007311	1.136801		12.0	30
Perfluoropentanoic acid (PFPeA)	A	2500	2730	0.9389823	1.038928		9.3	30
Perfluorohexanoic acid (PFHxA)	A	2500	2850	0.8564872	0.9820316		13.9	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2480	2.048636	2.209957		5.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2690	4.459666	4.732208		15.7	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2650	1.580113	1.834793		12.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2700	0.1501413	0.1596652		8.1	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2590	0.8733067	1.112276		7.8	30
Perfluorodecanoic acid (PFDA)	A	2500	3140	0.8931719	1.177664		25.7	30
Perfluorododecanoic acid (PFDoA)	A	2500	2630	0.9030851	1.007944		5.0	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2300	6.620525	6.999647		3.6	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2440	0.5239373	0.550671		2.5	30
N-EtFOSAA	A	2500	2750	0.8606614	0.9575488		10.1	30
N-MeFOSAA	A	2500	3080	0.8138191	0.992017		23.3	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2640	0.9267805	1.00817		5.7	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2630	1.038657	1.156964		5.1	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2620	1.098446	1.32142		11.9	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	3120	0.6004454	0.7225144		29.5	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2830	0.8380831	0.9382582		13.4	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2780	0.3563489	0.4293682		15.9	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2770	0.3876955	0.444862		10.9	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2960	0.3601304	0.4258081		18.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2460	0.9718027	1.04973		7.7	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2730	0.6672115	0.7594099		9.4	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2700	1.032492	1.163683		7.8	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2570	0.9799093	1.156687		8.2	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2470	1.06916	1.130356		4.9	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2510	0.8649995	0.8957813		0.5	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2700	0.5878176	0.6639191		8.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2850	0.9184038	1.06236		13.8	30
Perfluorooctanoic acid (PFOA)	A	2500	2780	0.9573613	1.041821		11.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2670	0.9449598	1.058299		15.0	30
Perfluorononanoic acid (PFNA)	A	2500	2720	0.9510789	1.066885		8.9	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S063215-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	519	0.8546449	0.8964229		3.8	30
Perfluorobutanesulfonic acid (PFBS)	A	444	461	1.007311	1.05424		3.8	30
Perfluoropentanoic acid (PFPeA)	A	500	503	0.9389823	0.9559499		0.5	30
Perfluorohexanoic acid (PFHxA)	A	500	536	0.8564872	0.9239521		7.2	30
11Cl-PF3OUdS (F53B Minor)	A	472	485	2.048636	2.154713		2.7	30
9Cl-PF3ONS (F53B Major)	A	466	610	4.459666	5.288265		30.8	30 *
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	487	1.580113	1.686391		3.2	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	399	0.1501413	0.117389		-20.2	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	435	0.8733067	0.9527573		-9.3	30
Perfluorodecanoic acid (PFDA)	A	500	518	0.8931719	0.9699318		3.6	30
Perfluorododecanoic acid (PFDoA)	A	500	501	0.9030851	0.9606483		0.1	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	432	6.620525	6.533383		-2.9	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	494	0.5239373	0.55977		3.8	30
N-EtFOSAA	A	500	557	0.8606614	0.9694775		11.5	30
N-MeFOSAA	A	500	534	0.8138191	0.8602215		6.9	30
Perfluorotetradecanoic acid (PFTA)	A	500	531	0.9267805	1.012566		6.2	30
Perfluorotridecanoic acid (PFTrDA)	A	500	495	1.038657	1.091406		-1.0	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	517	1.098446	1.32281		10.4	30
Perfluorodecanesulfonic acid (PFDS)	A	482	530	0.6004454	0.6137781		10.0	30
Perfluorooctanesulfonamide (FOSA)	A	500	534	0.8380831	0.8831332		6.7	30
Perfluorononanesulfonic acid (PFNS)	A	481	546	0.3563489	0.4219262		13.6	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	487	0.3876955	0.3909093		-2.6	30
Perfluoro-1-butanefulfonamide (FBSA)	A	500	511	0.3601304	0.3676538		2.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	475	0.9718027	1.011806		3.9	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	491	0.6672115	0.6801277		-1.9	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	501	1.032492	1.080749		0.3	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	451	0.9799093	1.028707		-5.2	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	461	1.06916	1.056776		-1.9	30
Perfluoroundecanoic acid (PFUnA)	A	500	511	0.8649995	0.911463		2.2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	488	0.5878176	0.5989946		-2.5	30
Perfluoroheptanoic acid (PFHpA)	A	500	552	0.9184038	1.030652		10.3	30
Perfluorooctanoic acid (PFOA)	A	500	482	0.9573613	0.9013926		-3.7	30
Perfluorooctanesulfonic acid (PFOS)	A	464	511	0.9449598	1.01358		10.1	30
Perfluorononanoic acid (PFNA)	A	500	498	0.9510789	0.9738044		-0.5	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S063215-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2820	0.8546449	0.97517		12.9	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2550	1.007311	1.167275		15.0	30
Perfluoropentanoic acid (PFPeA)	A	2500	2780	0.9389823	1.058249		11.3	30
Perfluorohexanoic acid (PFHxA)	A	2500	2840	0.8564872	0.9777762		13.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2510	2.048636	2.236985		6.5	30
9Cl-PF3ONS (F53B Major)	A	2330	2940	4.459666	5.164488		26.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2680	1.580113	1.852268		13.4	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2370	0.1501413	0.1396892		-5.3	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2540	0.8733067	1.09385		6.0	30
Perfluorodecanoic acid (PFDA)	A	2500	2830	0.8931719	1.061743		13.4	30
Perfluorododecanoic acid (PFDoA)	A	2500	2840	0.9030851	1.088325		13.4	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2340	6.620525	7.136114		5.6	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2570	0.5239373	0.579		7.8	30
N-EtFOSAA	A	2500	2860	0.8606614	0.9935774		14.3	30
N-MeFOSAA	A	2500	2830	0.8138191	0.9097304		13.0	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2750	0.9267805	1.048738		10.0	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2680	1.038657	1.178763		7.1	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	3010	0.6004454	0.6966692		24.9	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2710	1.098446	1.364166		15.6	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2820	0.8380831	0.9333961		12.8	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2710	0.3563489	0.4175489		12.7	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2810	0.3876955	0.4509893		12.4	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2780	0.3601304	0.4008036		11.4	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2740	0.9718027	1.172259		20.3	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2700	0.6672115	0.7505732		8.1	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2730	1.032492	1.178547		9.2	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2930	0.9799093	1.313914		23.2	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2670	1.06916	1.224216		13.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2710	0.8649995	0.9650256		8.2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2630	0.5878176	0.6469829		5.4	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2860	0.9184038	1.067837		14.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2760	0.9573613	1.032346		10.3	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2500	0.9449598	0.9912134		7.7	30
Perfluorononanoic acid (PFNA)	A	2500	2680	0.9510789	1.050433		7.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S063215-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2800	0.8546449	0.9680745		12.1	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2530	1.007311	1.157255		14.0	30
Perfluoropentanoic acid (PFPeA)	A	2500	2790	0.9389823	1.062001		11.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2780	0.8564872	0.9571138		11.0	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2520	2.048636	2.24589		7.0	30
9Cl-PF3ONS (F53B Major)	A	2330	2760	4.459666	4.856677		18.7	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2700	1.580113	1.867034		14.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2420	0.1501413	0.1427589		-3.3	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2630	0.8733067	1.13166		9.7	30
Perfluorodecanoic acid (PFDA)	A	2500	3050	0.8931719	1.143273		22.1	30
Perfluorododecanoic acid (PFDoA)	A	2500	2890	0.9030851	1.108253		15.5	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2280	6.620525	6.952843		2.9	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2520	0.5239373	0.5678381		5.7	30
N-EtFOSAA	A	2500	2720	0.8606614	0.9457775		8.8	30
N-MeFOSAA	A	2500	3170	0.8138191	1.020803		26.8	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2590	0.9267805	0.9870534		3.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2500	1.038657	1.102332		0.1	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2710	1.098446	1.363935		15.6	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	3070	0.6004454	0.7102203		27.3	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2920	0.8380831	0.9672187		16.9	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2470	0.3563489	0.3815059		3.0	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2610	0.3876955	0.4183676		4.3	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2790	0.3601304	0.401837		11.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2470	0.9718027	1.055486		8.3	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2710	0.6672115	0.7514572		8.2	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2710	1.032492	1.169748		8.4	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2530	0.9799093	1.136804		6.3	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2490	1.06916	1.142238		6.0	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2720	0.8649995	0.9692597		8.7	30
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	A	2500	2680	0.5878176	0.6571822		7.0	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2790	0.9184038	1.043001		11.8	30
Perfluorooctanoic acid (PFOA)	A	2500	2810	0.9573613	1.051848		12.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2670	0.9449598	1.058427		15.0	30
Perfluorononanoic acid (PFNA)	A	2500	2680	0.9510789	1.050567		7.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S063221-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2450	0.9656059	0.9710551		-2.2	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2140	1.1242	1.117574		-3.7	30
Perfluoropentanoic acid (PFPeA)	A	2500	2420	1.05174	1.056623		-3.3	30
Perfluorohexanoic acid (PFHxA)	A	2500	2450	0.9489742	0.957783		-2.1	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2320	2.363982	2.083631		-1.5	30
9Cl-PF3ONS (F53B Major)	A	2330	2560	5.246226	4.942424		10.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2210	1.765648	1.745609		-6.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	1950	0.1862258	0.1558877		-21.9	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2550	0.9676384	1.092997		6.2	30
Perfluorodecanoic acid (PFDA)	A	2500	2540	1.037031	1.062249		1.5	30
Perfluorododecanoic acid (PFDoA)	A	2500	2130	1.074115	0.9518081		-15.0	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2080	7.400441	7.215471		-6.3	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2500	0.5798556	0.5660741		5.0	30
N-EtFOSAA	A	2500	2470	0.9575432	0.9878716		-1.4	30
N-MeFOSAA	A	2500	2660	0.9158731	0.9410708		6.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2310	1.038117	1.028369		-7.7	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2540	1.134752	1.158242		1.6	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2420	1.252192	1.366792		3.6	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2670	0.6403624	0.7228634		10.8	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2550	0.9274784	0.9596355		2.1	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2250	0.4062541	0.3734644		-6.3	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2240	0.4636642	0.4280681		-10.4	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2430	0.4228548	0.4241113		-3.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2290	1.116241	1.121648		0.5	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2310	0.7507953	0.7361997		-7.8	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2320	1.160143	1.134908		-7.2	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2630	1.084594	1.207056		10.6	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2340	1.203835	1.216353		-0.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2450	0.9506683	1.025127		-2.0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2370	0.6507073	0.6419401		-5.2	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2510	1.04241	1.02528		0.5	30
Perfluorooctanoic acid (PFOA)	A	2500	2250	0.9980886	0.9498695		-9.9	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	1.07668	1.046502		-2.7	30
Perfluorononanoic acid (PFNA)	A	2500	2450	1.021424	1.008075		-2.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S063221-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	459	0.9656059	0.9119961		-8.1	30
Perfluorobutanesulfonic acid (PFBS)	A	444	420	1.1242	1.098644		-5.3	30
Perfluoropentanoic acid (PFPeA)	A	500	457	1.05174	0.9981498		-8.7	30
Perfluorohexanoic acid (PFHxA)	A	500	453	0.9489742	0.8858728		-9.5	30
11Cl-PF3OUdS (F53B Minor)	A	472	438	2.363982	1.95693		-7.2	30
9Cl-PF3ONS (F53B Major)	A	466	571	5.246226	5.423644		22.6	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	417	1.765648	1.650404		-11.6	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	521	0.1862258	0.2083441		4.2	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	428	0.9676384	0.9317991		-10.7	30
Perfluorodecanoic acid (PFDA)	A	500	475	1.037031	0.9948654		-4.9	30
Perfluorododecanoic acid (PFDoA)	A	500	434	1.074115	0.9711336		-13.3	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	384	7.400441	6.640704		-13.6	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	484	0.5798556	0.5442782		1.6	30
N-EtFOSAA	A	500	486	0.9575432	0.9729999		-2.9	30
N-MeFOSAA	A	500	485	0.9158731	0.8583317		-3.0	30
Perfluorotetradecanoic acid (PFTA)	A	500	456	1.038117	1.015393		-8.8	30
Perfluorotridecanoic acid (PFTrDA)	A	500	490	1.134752	1.114038		-2.0	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	428	1.252192	1.223828		-8.6	30
Perfluorodecanesulfonic acid (PFDS)	A	482	504	0.6403624	0.6815987		4.5	30
Perfluorooctanesulfonamide (FOSA)	A	500	462	0.9274784	0.8677789		-7.6	30
Perfluorononanesulfonic acid (PFNS)	A	481	391	0.4062541	0.32435		-18.7	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	432	0.4636642	0.41234		-13.7	30
Perfluoro-1-butanefulfonamide (FBSA)	A	500	459	0.4228548	0.4010861		-8.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	404	1.116241	0.9866923		-11.6	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	426	0.7507953	0.6799418		-14.8	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	426	1.160143	1.041479		-14.8	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	466	1.084594	1.081802		-2.2	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	419	1.203835	1.091075		-10.8	30
Perfluoroundecanoic acid (PFUnA)	A	500	439	0.9506683	0.9171848		-12.3	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	462	0.6507073	0.6260601		-7.5	30
Perfluoroheptanoic acid (PFHpA)	A	500	512	1.04241	1.041099		2.4	30
Perfluorooctanoic acid (PFOA)	A	500	463	0.9980886	0.9759742		-7.5	30
Perfluorooctanesulfonic acid (PFOS)	A	464	448	1.07668	1.037914		-3.5	30
Perfluorononanoic acid (PFNA)	A	500	476	1.021424	0.9813296		-4.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S063221-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2340	0.9656059	0.9299665		-6.3	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2100	1.1242	1.097819		-5.4	30
Perfluoropentanoic acid (PFPeA)	A	2500	2340	1.05174	1.021702		-6.5	30
Perfluorohexanoic acid (PFHxA)	A	2500	2350	0.9489742	0.9196034		-6.0	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2400	2.363982	2.154932		1.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2880	5.246226	5.569585		23.7	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2180	1.765648	1.724042		-7.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2360	0.1862258	0.1886777		-5.5	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2330	0.9676384	0.9991029		-3.1	30
Perfluorodecanoic acid (PFDA)	A	2500	2520	1.037031	1.054303		0.8	30
Perfluorododecanoic acid (PFDoA)	A	2500	2430	1.074115	1.087245		-2.9	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	1970	7.400441	6.826763		-11.3	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2400	0.5798556	0.54337		0.8	30
N-EtFOSAA	A	2500	2430	0.9575432	0.974479		-2.7	30
N-MeFOSAA	A	2500	2530	0.9158731	0.8957706		1.2	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2290	1.038117	1.021707		-8.3	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2430	1.134752	1.108849		-2.7	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2320	1.252192	1.306664		-1.1	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2390	0.6403624	0.6455445		-1.0	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2520	0.9274784	0.9483031		0.9	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2700	0.4062541	0.4488218		12.6	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2240	0.4636642	0.4271524		-10.6	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2370	0.4228548	0.4138291		-5.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2170	1.116241	1.063094		-4.8	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2240	0.7507953	0.7161755		-10.3	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2240	1.160143	1.096222		-10.4	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2560	1.084594	1.174015		7.6	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2260	1.203835	1.176295		-3.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2210	0.9506683	0.9253783		-11.5	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2310	0.6507073	0.625302		-7.6	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2500	1.04241	1.019169		-0.08	30
Perfluorooctanoic acid (PFOA)	A	2500	2490	0.9980886	1.052002		-0.3	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2150	1.07668	0.9953201		-7.4	30
Perfluorononanoic acid (PFNA)	A	2500	2310	1.021424	0.9506456		-7.6	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S063221-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2310	0.9656059	0.9161937		-7.7	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2100	1.1242	1.100013		-5.2	30
Perfluoropentanoic acid (PFPeA)	A	2500	2350	1.05174	1.025061		-6.2	30
Perfluorohexanoic acid (PFHxA)	A	2500	2310	0.9489742	0.9040551		-7.6	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2640	2.363982	2.368215		11.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2650	5.246226	5.107194		13.7	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2210	1.765648	1.746413		-6.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2550	0.1862258	0.2037327		2.1	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2540	0.9676384	1.087476		5.6	30
Perfluorodecanoic acid (PFDA)	A	2500	2360	1.037031	0.9863475		-5.7	30
Perfluorododecanoic acid (PFDoA)	A	2500	2390	1.074115	1.069595		-4.5	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2000	7.400441	6.928021		-10.0	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2780	0.5798556	0.6307019		16.8	30
N-EtFOSAA	A	2500	2170	0.9575432	0.8709778		-13.0	30
N-MeFOSAA	A	2500	2690	0.9158731	0.9509961		7.5	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2220	1.038117	0.9879967		-11.3	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2400	1.134752	1.092505		-4.2	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2130	0.6403624	0.5777732		-11.4	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2270	1.252192	1.281782		-3.0	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2450	0.9274784	0.9202201		-2.1	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2310	0.4062541	0.383203		-3.9	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2320	0.4636642	0.442654		-7.3	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2320	0.4228548	0.4059035		-7.1	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2170	1.116241	1.063321		-4.7	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2250	0.7507953	0.7189533		-9.9	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2330	1.160143	1.14138		-6.7	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2670	1.084594	1.22347		12.2	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2190	1.203835	1.137635		-7.0	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2110	0.9506683	0.8844487		-15.4	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2300	0.6507073	0.6226994		-8.0	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2330	1.04241	0.9491219		-6.9	30
Perfluorooctanoic acid (PFOA)	A	2500	2440	0.9980886	1.029951		-2.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2210	1.07668	1.024212		-4.7	30
Perfluorononanoic acid (PFNA)	A	2500	2450	1.021424	1.009834		-1.9	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S063221-CCV5

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2360	0.9656059	0.9374355		-5.6	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2120	1.1242	1.110364		-4.3	30
Perfluoropentanoic acid (PFPeA)	A	2500	2320	1.05174	1.015316		-7.1	30
Perfluorohexanoic acid (PFHxA)	A	2500	2330	0.9489742	0.9128769		-6.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2490	2.363982	2.233242		5.5	30
9Cl-PF3ONS (F53B Major)	A	2330	2600	5.246226	5.008131		11.5	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2200	1.765648	1.740284		-6.8	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2560	0.1862258	0.2040354		2.3	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2540	0.9676384	1.088716		5.8	30
Perfluorodecanoic acid (PFDA)	A	2500	2520	1.037031	1.054123		0.7	30
Perfluorododecanoic acid (PFDoA)	A	2500	2370	1.074115	1.063554		-5.0	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2000	7.400441	6.927952		-10.0	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2510	0.5798556	0.5692048		5.5	30
N-EtFOSAA	A	2500	2160	0.9575432	0.8655228		-13.6	30
N-MeFOSAA	A	2500	2890	0.9158731	1.021664		15.5	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2140	1.038117	0.9513594		-14.6	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2390	1.134752	1.089709		-4.4	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2340	1.252192	1.321075		0.06	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2270	0.6403624	0.6141953		-5.8	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2380	0.9274784	0.8957866		-4.7	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2470	0.4062541	0.4102535		2.9	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2390	0.4636642	0.4561132		-4.5	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2290	0.4228548	0.4007703		-8.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2250	1.116241	1.103027		-1.2	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2250	0.7507953	0.717056		-10.2	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2290	1.160143	1.121526		-8.3	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2920	1.084594	1.335927		22.7	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2240	1.203835	1.165123		-4.7	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2310	0.9506683	0.9662423		-7.6	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2360	0.6507073	0.6383671		-5.7	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2430	1.04241	0.9903187		-2.9	30
Perfluorooctanoic acid (PFOA)	A	2500	2440	0.9980886	1.029032		-2.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	1.07668	1.047992		-2.5	30
Perfluorononanoic acid (PFNA)	A	2500	2730	1.021424	1.121444		9.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S063221-CCV6

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2330	0.9656059	0.9266256		-6.6	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2140	1.1242	1.117207		-3.7	30
Perfluoropentanoic acid (PFPeA)	A	2500	2290	1.05174	0.9991347		-8.6	30
Perfluorohexanoic acid (PFHxA)	A	2500	2320	0.9489742	0.908137		-7.2	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2370	2.363982	2.125008		0.4	30
9Cl-PF3ONS (F53B Major)	A	2330	2350	5.246226	4.516243		0.7	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2230	1.765648	1.761923		-5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2610	0.1862258	0.2083877		4.4	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2620	0.9676384	1.121402		9.0	30
Perfluorodecanoic acid (PFDA)	A	2500	2440	1.037031	1.019337		-2.6	30
Perfluorododecanoic acid (PFDoA)	A	2500	2290	1.074115	1.024581		-8.5	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2000	7.400441	6.932138		-10.0	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2290	0.5798556	0.5177874		-3.9	30
N-EtFOSAA	A	2500	2390	0.9575432	0.9588815		-4.3	30
N-MeFOSAA	A	2500	2500	0.9158731	0.8863239		0.2	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2260	1.038117	1.008722		-9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2440	1.134752	1.112523		-2.4	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2390	0.6403624	0.6477873		-0.7	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2190	1.252192	1.238863		-6.3	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2540	0.9274784	0.954254		1.6	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2480	0.4062541	0.4127427		3.5	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2190	0.4636642	0.4174972		-12.6	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2250	0.4228548	0.3934062		-10.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2150	1.116241	1.052461		-5.7	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2230	0.7507953	0.7113114		-10.9	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2320	1.160143	1.133199		-7.3	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2170	1.084594	0.9964902		-8.9	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2280	1.203835	1.187784		-2.9	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2390	0.9506683	0.9998787		-4.4	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2410	0.6507073	0.6535378		-3.4	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2380	1.04241	0.9700811		-4.9	30
Perfluorooctanoic acid (PFOA)	A	2500	2380	0.9980886	1.003531		-4.9	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2240	1.07668	1.039104		-3.3	30
Perfluorononanoic acid (PFNA)	A	2500	2410	1.021424	0.9914247		-3.6	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S063221-CCV7

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2340	0.9656059	0.9296092		-6.3	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2090	1.1242	1.09349		-5.7	30
Perfluoropentanoic acid (PFPeA)	A	2500	2310	1.05174	1.010683		-7.5	30
Perfluorohexanoic acid (PFHxA)	A	2500	2320	0.9489742	0.9074748		-7.2	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2640	2.363982	2.372279		12.0	30
9Cl-PF3ONS (F53B Major)	A	2330	2560	5.246226	4.937747		10.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2270	1.765648	1.79845		-3.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2430	0.1862258	0.1940418		-2.8	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2280	0.9676384	0.9778219		-5.2	30
Perfluorodecanoic acid (PFDA)	A	2500	2450	1.037031	1.023549		-2.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2310	1.074115	1.032462		-7.8	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	1960	7.400441	6.814625		-11.5	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2600	0.5798556	0.5900225		9.4	30
N-EtFOSAA	A	2500	2080	0.9575432	0.8325401		-16.9	30
N-MeFOSAA	A	2500	2830	0.9158731	1.001147		13.2	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2210	1.038117	0.9846893		-11.6	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2340	1.134752	1.066368		-6.5	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2280	1.252192	1.286857		-2.6	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2210	0.6403624	0.5973772		-8.4	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2110	0.9274784	0.7927308		-15.6	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2570	0.4062541	0.4266489		7.0	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2210	0.4636642	0.4213923		-11.8	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2300	0.4228548	0.4021386		-8.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2260	1.116241	1.104281		-1.1	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2240	0.7507953	0.7154535		-10.4	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2320	1.160143	1.134222		-7.3	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2380	1.084594	1.094909		0.2	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2340	1.203835	1.216322		-0.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2320	0.9506683	0.9718668		-7.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2410	0.6507073	0.6514086		-3.8	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2440	1.04241	0.9963472		-2.3	30
Perfluorooctanoic acid (PFOA)	A	2500	2250	0.9980886	0.9473263		-10.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2300	1.07668	1.064348		-1.0	30
Perfluorononanoic acid (PFNA)	A	2500	2670	1.021424	1.099787		6.9	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S063227-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2450	0.9656059	0.9710551		-2.2	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2140	1.1242	1.117574		-3.7	30
Perfluoropentanoic acid (PFPeA)	A	2500	2420	1.05174	1.056623		-3.3	30
Perfluorohexanoic acid (PFHxA)	A	2500	2450	0.9489742	0.957783		-2.1	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2320	2.363982	2.083631		-1.5	30
9Cl-PF3ONS (F53B Major)	A	2330	2560	5.246226	4.942424		10.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2210	1.765648	1.745609		-6.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	1950	0.1862258	0.1558877		-21.9	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2550	0.9676384	1.092997		6.2	30
Perfluorodecanoic acid (PFDA)	A	2500	2540	1.037031	1.062249		1.5	30
Perfluorododecanoic acid (PFDoA)	A	2500	2130	1.074115	0.9518081		-15.0	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2080	7.400441	7.215471		-6.3	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2500	0.5798556	0.5660741		5.0	30
N-EtFOSAA	A	2500	2470	0.9575432	0.9878716		-1.4	30
N-MeFOSAA	A	2500	2660	0.9158731	0.9410708		6.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2310	1.038117	1.028369		-7.7	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2540	1.134752	1.158242		1.6	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2420	1.252192	1.366792		3.6	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2670	0.6403624	0.7228634		10.8	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2550	0.9274784	0.9596355		2.1	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2250	0.4062541	0.3734644		-6.3	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2240	0.4636642	0.4280681		-10.4	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2430	0.4228548	0.4241113		-3.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2290	1.116241	1.121648		0.5	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2310	0.7507953	0.7361997		-7.8	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2320	1.160143	1.134908		-7.2	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2630	1.084594	1.207056		10.6	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2340	1.203835	1.216353		-0.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2450	0.9506683	1.025127		-2.0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2370	0.6507073	0.6419401		-5.2	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2510	1.04241	1.02528		0.5	30
Perfluorooctanoic acid (PFOA)	A	2500	2250	0.9980886	0.9498695		-9.9	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	1.07668	1.046502		-2.7	30
Perfluorononanoic acid (PFNA)	A	2500	2450	1.021424	1.008075		-2.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S063227-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2360	0.9656059	0.9374355		-5.6	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2120	1.1242	1.110364		-4.3	30
Perfluoropentanoic acid (PFPeA)	A	2500	2320	1.05174	1.015316		-7.1	30
Perfluorohexanoic acid (PFHxA)	A	2500	2330	0.9489742	0.9128769		-6.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2490	2.363982	2.233242		5.5	30
9Cl-PF3ONS (F53B Major)	A	2330	2600	5.246226	5.008131		11.5	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2200	1.765648	1.740284		-6.8	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2560	0.1862258	0.2040354		2.3	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2540	0.9676384	1.088716		5.8	30
Perfluorodecanoic acid (PFDA)	A	2500	2520	1.037031	1.054123		0.7	30
Perfluorododecanoic acid (PFDoA)	A	2500	2370	1.074115	1.063554		-5.0	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2000	7.400441	6.927952		-10.0	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2510	0.5798556	0.5692048		5.5	30
N-EtFOSAA	A	2500	2160	0.9575432	0.8655228		-13.6	30
N-MeFOSAA	A	2500	2890	0.9158731	1.021664		15.5	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2140	1.038117	0.9513594		-14.6	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2390	1.134752	1.089709		-4.4	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2340	1.252192	1.321075		0.06	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2270	0.6403624	0.6141953		-5.8	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2380	0.9274784	0.8957866		-4.7	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2470	0.4062541	0.4102535		2.9	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2390	0.4636642	0.4561132		-4.5	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2290	0.4228548	0.4007703		-8.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2250	1.116241	1.103027		-1.2	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2250	0.7507953	0.717056		-10.2	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2290	1.160143	1.121526		-8.3	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2920	1.084594	1.335927		22.7	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2240	1.203835	1.165123		-4.7	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2310	0.9506683	0.9662423		-7.6	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2360	0.6507073	0.6383671		-5.7	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2430	1.04241	0.9903187		-2.9	30
Perfluorooctanoic acid (PFOA)	A	2500	2440	0.9980886	1.029032		-2.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	1.07668	1.047992		-2.5	30
Perfluorononanoic acid (PFNA)	A	2500	2730	1.021424	1.121444		9.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S063227-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2330	0.9656059	0.9266256		-6.6	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2140	1.1242	1.117207		-3.7	30
Perfluoropentanoic acid (PFPeA)	A	2500	2290	1.05174	0.9991347		-8.6	30
Perfluorohexanoic acid (PFHxA)	A	2500	2320	0.9489742	0.908137		-7.2	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2370	2.363982	2.125008		0.4	30
9Cl-PF3ONS (F53B Major)	A	2330	2350	5.246226	4.516243		0.7	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2230	1.765648	1.761923		-5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2610	0.1862258	0.2083877		4.4	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2620	0.9676384	1.121402		9.0	30
Perfluorodecanoic acid (PFDA)	A	2500	2440	1.037031	1.019337		-2.6	30
Perfluorododecanoic acid (PFDoA)	A	2500	2290	1.074115	1.024581		-8.5	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2000	7.400441	6.932138		-10.0	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2290	0.5798556	0.5177874		-3.9	30
N-EtFOSAA	A	2500	2390	0.9575432	0.9588815		-4.3	30
N-MeFOSAA	A	2500	2500	0.9158731	0.8863239		0.2	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2260	1.038117	1.008722		-9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2440	1.134752	1.112523		-2.4	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2390	0.6403624	0.6477873		-0.7	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2190	1.252192	1.238863		-6.3	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2540	0.9274784	0.954254		1.6	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2480	0.4062541	0.4127427		3.5	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2190	0.4636642	0.4174972		-12.6	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2250	0.4228548	0.3934062		-10.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2150	1.116241	1.052461		-5.7	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2230	0.7507953	0.7113114		-10.9	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2320	1.160143	1.133199		-7.3	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2170	1.084594	0.9964902		-8.9	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2280	1.203835	1.187784		-2.9	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2390	0.9506683	0.9998787		-4.4	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2410	0.6507073	0.6535378		-3.4	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2380	1.04241	0.9700811		-4.9	30
Perfluorooctanoic acid (PFOA)	A	2500	2380	0.9980886	1.003531		-4.9	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2240	1.07668	1.039104		-3.3	30
Perfluorononanoic acid (PFNA)	A	2500	2410	1.021424	0.9914247		-3.6	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-466 PFAS

S063227-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2340	0.9656059	0.9296092		-6.3	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2090	1.1242	1.09349		-5.7	30
Perfluoropentanoic acid (PFPeA)	A	2500	2310	1.05174	1.010683		-7.5	30
Perfluorohexanoic acid (PFHxA)	A	2500	2320	0.9489742	0.9074748		-7.2	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2640	2.363982	2.372279		12.0	30
9Cl-PF3ONS (F53B Major)	A	2330	2560	5.246226	4.937747		10.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2270	1.765648	1.79845		-3.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2430	0.1862258	0.1940418		-2.8	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2280	0.9676384	0.9778219		-5.2	30
Perfluorodecanoic acid (PFDA)	A	2500	2450	1.037031	1.023549		-2.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2310	1.074115	1.032462		-7.8	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	1960	7.400441	6.814625		-11.5	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2600	0.5798556	0.5900225		9.4	30
N-EtFOSAA	A	2500	2080	0.9575432	0.8325401		-16.9	30
N-MeFOSAA	A	2500	2830	0.9158731	1.001147		13.2	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2210	1.038117	0.9846893		-11.6	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2340	1.134752	1.066368		-6.5	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2280	1.252192	1.286857		-2.6	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2210	0.6403624	0.5973772		-8.4	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2110	0.9274784	0.7927308		-15.6	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2570	0.4062541	0.4266489		7.0	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2210	0.4636642	0.4213923		-11.8	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2300	0.4228548	0.4021386		-8.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2260	1.116241	1.104281		-1.1	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2240	0.7507953	0.7154535		-10.4	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2320	1.160143	1.134222		-7.3	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2380	1.084594	1.094909		0.2	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2340	1.203835	1.216322		-0.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2320	0.9506683	0.9718668		-7.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2410	0.6507073	0.6514086		-3.8	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2440	1.04241	0.9963472		-2.3	30
Perfluorooctanoic acid (PFOA)	A	2500	2250	0.9980886	0.9473263		-10.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2300	1.07668	1.064348		-1.0	30
Perfluorononanoic acid (PFNA)	A	2500	2670	1.021424	1.099787		6.9	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SOP-454 PFAS in Water	
Perfluorobutanoic acid (PFBA)	NH-P
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluoropentanoic acid (PFPeA)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
11Cl-PF3OUdS (F53B Minor)	NH-P
9Cl-PF3ONS (F53B Major)	NH-P
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P
8:2 Fluorotelomersulfonic acid (8:2FTS A)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	NH-P
Perfluoroheptanesulfonic acid (PFHpS)	NH-P
N-EtFOSAA	NH-P
N-MeFOSAA	NH-P
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
4:2 Fluorotelomersulfonic acid (4:2FTS A)	NH-P
Perfluorodecanesulfonic acid (PFDS)	NH-P
Perfluorooctanesulfonamide (FOSA)	NH-P
Perfluorononanesulfonic acid (PFNS)	NH-P
Perfluoro-1-hexanesulfonamide (FHxSA)	NH-P
Perfluoro-1-butanesulfonamide (FBSA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
Perfluoro-4-oxapentanoic acid (PFMPA)	NH-P
Perfluoro-5-oxahexanoic acid (PFMBA)	NH-P
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P
Perfluoropetanesulfonic acid (PFPeS)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P
SOP-466 PFAS in Soil	
Perfluorobutanoic acid (PFBA)	NH-P
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluoropentanoic acid (PFPeA)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
11Cl-PF3OUdS (F53B Minor)	NH-P
9Cl-PF3ONS (F53B Major)	NH-P
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P
8:2 Fluorotelomersulfonic acid (8:2FTS A)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SOP-466 PFAS in Soil</i>	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	NH-P
Perfluoroheptanesulfonic acid (PFHpS)	NH-P
N-EtFOSAA	NH-P
N-MeFOSAA	NH-P
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
4:2 Fluorotelomersulfonic acid (4:2FTS A)	NH-P
Perfluorodecanesulfonic acid (PFDS)	NH-P
Perfluorooctanesulfonamide (FOSA)	NH-P
Perfluorononanesulfonic acid (PFNS)	NH-P
Perfluoro-1-hexanesulfonamide (FHxSA)	NH-P
Perfluoro-1-butanefulfonamide (FBSA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
Perfluoro-4-oxapentanoic acid (PFMPA)	NH-P
Perfluoro-5-oxahexanoic acid (PFMBA)	NH-P
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P
Perfluoropetanesulfonic acid (PFPeS)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2021

21H1473

Phone: 612-607-6400
Fax: 612-607-6344

PACE Analytical

Doc # 381 Rev 4_01/08/2020

1800 Elm Street SE
Minneapolis, MN 55414

Page 1 of 2

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
 Address: 120 Front Street, Worcester, MA 01610
 Phone: 508-754-2201
 Project Location: Princeton PFAS Project
 Project Number: P-0534017
 Project Manager: Jeff Arps
 Invoice Recipient: Tighe & Bond
 Sampled By: M. Scherer

CHAIN OF CUSTODY RECORD
 7 Day PFAS 10 Day (std) 10 Day Due Date:
 1 Day 3 Day 4 Day
 Format: PDF EXCEL
 Other: SOXHLET
 CLP Like Data Pkg Required:
 Email To: mjscherer@tighebond.com
 Fax To #: NON SOXHLET

ANALYSIS REQUESTED

Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	PFAS Isotope Dilution Method	Preservation Code
1 S-1	8/24/21	0830	G	S	U		/			✓	VIALS
2 S-2		0845					/			✓	GLASS
3 S-3		0900					/			✓	PLASTIC
4 S-4		0915					/			✓	BACTERIA
5 S-4 Dop		0915					/			✓	ENCORE
6 S-5		0930					/			✓	Glassware in the fridge? Y/N
7 S-6		0945					/			✓	Glassware in freezer? Y/N
8 S-7		1000					/			✓	Prepackaged Cooler? Y/N
9 EA Blank		0920		W			/			✓	*Pace Analytical is not responsible for missing samples from prepacked coolers
10 FIELD Blank		0920		W			/			✓	Matrix Codes: GW = Ground Water WW = Waste Water DW = Drinking Water A = Air S = Soil SL = Sludge SOL = Solid O = Other (please define)

Client Comments:

Received by: (signature) Date/Time: 8/24/21 1500
 Retinquished by: (signature) Date/Time: 8/27/21 1630
 Received by: (signature) Date/Time: 8/27/21 1830
 Retinquished by: (signature) Date/Time: 8/27/21 1830
 Received by: (signature) Date/Time: _____
 Retinquished by: (signature) Date/Time: _____
 Received by: (signature) Date/Time: _____
 Retinquished by: (signature) Date/Time: _____

Special Requirements: MA MCP Required MA MCP Certification Form Required
 CT RCP Required RCP Certification Form Required
 MA State DW Required PWSID # _____

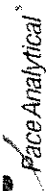
Project Entity: Government Municipality MWRA WRTA Other
 Federal 21 J School Chromatogram
 City Brownfield MBTA AIHA-LAP, LLC

NEIAC and AIHA-LAP, LLC Accredited

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

21H1473

Phone: 612-607-6400
Fax: 612-607-6344



Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
Tighe & Bond
120 Front Street, Worcester, MA 01610
Phone: 508-754-2201
Princeton PFAS Project
54 Mountain Road, Princeton, MA
Project Number: P-0534017
Project Manager: Jeff Arps
Pace Analytical Quote Name/Number
Invoice Recipient: Tighe & Bond
Sampled By: M Scherer

1800 Elm Street SE
Minneapolis, MN 55414
CHAIN OF CUSTODY RECORD

Doc # 381 Rev 4_01/08/2020

Page 2 of 2

ANALYSIS REQUESTED

Pace Analytical Work Order #	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAS	Matrix Code	Conc. Code	PFAS Isotope Dilution Method				Preservation Code Counter Use Only Total Number Of:	
							VIALS	GLASS	PLASTIC	BACTERIA		ENCORE
11	RINSATE	8/24/21	0800	-	W	C						VIALS GLASS PLASTIC 2 BACTERIA ENCORE
12	TRIP BLANK	-	-	-	W	C						Glassware in the fridge? Y / N
												Glassware in freezer? Y / N
												Prepackaged Cooler? Y / N
												*Pace Analytical is not responsible for missing samples from prepacked coolers
												1 Matrix Codes: GW = Ground Water WW = Waste Water DW = Drinking Water A = Air S = Soil SL = Sludge SOL = Solid O = Other (please define)
												2 Preservation Codes: I = Iced H = HCL M = Methanol N = Nitric Acid S = Sulfuric Acid B = Sodium Bisulfate X = Sodium Hydroxide T = Sodium Thiosulfate O = Other (please define)

Client Comments:

Relinquished by: (signature) *Amel Sle* Date/Time: 8/24/21 1500
 Received by: (signature) *CSK* Date/Time: 8/27/21 1630
 Relinquished by: (signature) *CSK* Date/Time: 8/27/21 1830
 Received by: (signature) *CSK* Date/Time: 8/27/21 1930

Special Requirements
 MA MCP Required
 MA State DW Required
 MWRA
 School
 MBTA
 WRTA
 Chromatogram
 AIHA-LAP, LLC

Project Entity
 Government
 Federal
 City
 Municipality
 21 J
 Brownfield

Lab Comments:
 Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Tighe & Bond

Received By [Signature] Date 9/27/21 Time 1930

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.3
By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client T Analysis T Sampler Name T
Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? _____

Are there Rushes? F Who was notified? _____

Are there Short Holds? F Who was notified? _____

Is there enough Volume? T

Is there Headspace where applicable? NA MS/MSD? F

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? F On COC? F

Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	12	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear
DI-		Other Glass		Other Plastic		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Unused Media

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear
DI-		Other Plastic		Other Glass		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Comments:

November 16, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

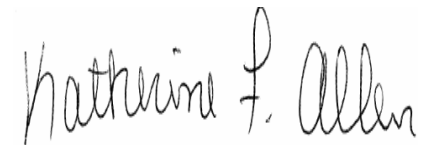
Project Location: 30 Mountain, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1946

Enclosed are results of analyses for samples as received by the laboratory on October 29, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 11/16/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1946

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 30 Mountain, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
30MTN S-6A (0-12)	21J1946-01	Soil		SM 2540G SOP-466 PFAS	
30MTN Basement 1 (6-8)	21J1946-02	Soil		SM 2540G SOP-466 PFAS	
30MTN Basement 2 (6-12)	21J1946-03	Soil		SM 2540G SOP-466 PFAS	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SOP-466 PFAS

Qualifications:

Laboratory fortified blank/laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.

Analyte & Samples(s) Qualified:

Perfluorononanesulfonic acid (PFNS)
B294575-BS1

Extracted Internal Standard recovery is outside of control limits. Data is not significantly affected since associated analyte is not detected and bias is on the high side.

Analyte & Samples(s) Qualified:

M2-6:2FTS, M2-8:2FTS
21J1946-01[30MTN S-6A (0-12)]

Sample prepared and extracted at a dilution.

Analyte & Samples(s) Qualified:

21J1946-02RE1[30MTN Basement 1 (6-8)]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing. I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Technical Representative

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1946

Date Received: 10/29/2021

Field Sample #: 30MTN S-6A (0-12)

Sampled: 10/29/2021 08:00

Sample ID: 21J1946-01

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	1.2	0.64	0.085	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluorobutanesulfonic acid (PFBS)	0.12	0.64	0.098	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluoropentanoic acid (PFPeA)	2.1	0.64	0.098	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluorohexanoic acid (PFHxA)	3.0	0.64	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.64	0.18	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
9Cl-PF3ONS (F53B Major)	ND	0.64	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.64	0.21	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.64	0.31	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.64	0.17	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluorodecanoic acid (PFDA)	0.12	0.64	0.083	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.64	0.098	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.64	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.64	0.19	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
N-EtFOSAA	ND	0.64	0.18	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
N-MeFOSAA	ND	0.64	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.64	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.64	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.64	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.64	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.64	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.64	0.17	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.64	0.19	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.64	0.20	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluorohexanesulfonic acid (PFHxS)	0.15	0.64	0.10	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.64	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.64	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.64	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.64	0.094	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.64	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.64	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluoroheptanoic acid (PFHpA)	0.36	0.64	0.093	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluorooctanoic acid (PFOA)	1.2	0.64	0.18	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluorooctanesulfonic acid (PFOS)	1.0	0.64	0.087	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH
Perfluorononanoic acid (PFNA)	0.22	0.64	0.11	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 19:36	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1946

Date Received: 10/29/2021

Field Sample #: 30MTN S-6A (0-12)

Sampled: 10/29/2021 08:00

Sample ID: 21J1946-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	60.5		% Wt	1		SM 2540G	11/11/21	11/12/21 9:05	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1946

Date Received: 10/29/2021

Field Sample #: 30MTN Basement 1 (6-8)

Sampled: 10/29/2021 08:30

Sample ID: 21J1946-02

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.48	0.064	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.48	0.073	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.48	0.073	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.48	0.089	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.48	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
9Cl-PF3ONS (F53B Major)	ND	0.48	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.48	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.48	0.23	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.48	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Perfluorodecanoic acid (PFDA)	ND	0.48	0.062	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.48	0.073	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.48	0.079	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Perfluoroheptanesulfonic acid (PFHpS)	1.3	0.48	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
N-EtFOSAA	ND	0.48	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
N-MeFOSAA	ND	0.48	0.087	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.48	0.091	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.48	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.48	0.088	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.48	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Perfluorooctanesulfonamide (FOSA)	0.13	0.48	0.094	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.48	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	6.1	0.48	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.48	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Perfluorohexanesulfonic acid (PFHxS)	2.9	0.48	0.077	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.48	0.090	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.48	0.088	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.53	0.48	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Perfluoropentanesulfonic acid (PFPeS)	0.073	0.48	0.070	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.48	0.087	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.48	0.074	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.48	0.069	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Perfluorooctanoic acid (PFOA)	0.97	0.48	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH
Perfluorooctanesulfonic acid (PFOS)	170	5.4	0.73	µg/kg dry	1		SOP-466 PFAS	11/13/21	11/15/21 19:20	BLH
Perfluorononanoic acid (PFNA)	0.080	0.48	0.079	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 19:43	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1946

Date Received: 10/29/2021

Field Sample #: 30MTN Basement 1 (6-8)

Sampled: 10/29/2021 08:30

Sample ID: 21J1946-02

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	83.3		% Wt	1		SM 2540G	11/11/21	11/12/21 9:06	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1946

Date Received: 10/29/2021

Field Sample #: 30MTN Basement 2 (6-12)

Sampled: 10/29/2021 09:00

Sample ID: 21J1946-03

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.77	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.77	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.77	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.77	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.77	0.21	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
9Cl-PF3ONS (F53B Major)	ND	0.77	0.19	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.77	0.25	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.77	0.37	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.77	0.20	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluorodecanoic acid (PFDA)	ND	0.77	0.099	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluorododecanoic acid (PFDoA)	0.34	0.77	0.12	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.77	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.77	0.23	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
N-EtFOSAA	0.33	0.77	0.22	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
N-MeFOSAA	0.85	0.77	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluorotetradecanoic acid (PFTA)	0.17	0.77	0.15	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.77	0.17	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.77	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluorodecanesulfonic acid (PFDS)	0.80	0.77	0.18	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluorooctanesulfonamide (FOSA)	2.2	0.77	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.77	0.21	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	0.27	0.77	0.23	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.77	0.24	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluorohexanesulfonic acid (PFHxS)	0.41	0.77	0.12	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.77	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.77	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.19	0.77	0.18	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.77	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.77	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.77	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.77	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluorooctanoic acid (PFOA)	ND	0.77	0.22	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluorooctanesulfonic acid (PFOS)	13	0.77	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH
Perfluorononanoic acid (PFNA)	ND	0.77	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:50	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1946

Date Received: 10/29/2021

Field Sample #: 30MTN Basement 2 (6-12)

Sampled: 10/29/2021 09:00

Sample ID: 21J1946-03

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	53.0		% Wt	1		SM 2540G	11/11/21	11/12/21 9:06	WT

Sample Extraction Data

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
21J1946-01 [30MTN S-6A (0-12)]	B294465	11/11/21
21J1946-02 [30MTN Basement 1 (6-8)]	B294465	11/11/21
21J1946-03 [30MTN Basement 2 (6-12)]	B294465	11/11/21

Prep Method: SOP 465-PFAAS-SOP-466 PFAS

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21J1946-01 [30MTN S-6A (0-12)]	B294033	5.80	5.00	11/09/21
21J1946-02 [30MTN Basement 1 (6-8)]	B294033	5.65	5.00	11/09/21
21J1946-03 [30MTN Basement 2 (6-12)]	B294033	5.54	5.00	11/09/21

Prep Method: SOP 465-PFAAS-SOP-466 PFAS

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21J1946-02RE1 [30MTN Basement 1 (6-8)]	B294575	0.502	5.00	11/13/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B294033 - SOP 465-PFAAS

Blank (B294033-BLK1)

Prepared: 11/09/21 Analyzed: 11/10/21

Perfluorobutanoic acid (PFBA)	ND	0.39	µg/kg wet							
Perfluorobutanesulfonic acid (PFBS)	ND	0.39	µg/kg wet							
Perfluoropentanoic acid (PFPeA)	ND	0.39	µg/kg wet							
Perfluorohexanoic acid (PFHxA)	ND	0.39	µg/kg wet							
11Cl-PF3OUdS (F53B Minor)	ND	0.39	µg/kg wet							
9Cl-PF3ONS (F53B Major)	ND	0.39	µg/kg wet							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.39	µg/kg wet							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.39	µg/kg wet							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.39	µg/kg wet							
Perfluorodecanoic acid (PFDA)	ND	0.39	µg/kg wet							
Perfluorododecanoic acid (PFDoA)	ND	0.39	µg/kg wet							
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.39	µg/kg wet							
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.39	µg/kg wet							
N-EtFOSAA	ND	0.39	µg/kg wet							
N-MeFOSAA	ND	0.39	µg/kg wet							
Perfluorotetradecanoic acid (PFTA)	ND	0.39	µg/kg wet							
Perfluorotridecanoic acid (PFTrDA)	ND	0.39	µg/kg wet							
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.39	µg/kg wet							
Perfluorodecanesulfonic acid (PFDS)	ND	0.39	µg/kg wet							
Perfluorooctanesulfonamide (FOSA)	ND	0.39	µg/kg wet							
Perfluorononanesulfonic acid (PFNS)	ND	0.39	µg/kg wet							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.39	µg/kg wet							
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.39	µg/kg wet							
Perfluorohexanesulfonic acid (PFHxS)	ND	0.39	µg/kg wet							
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.39	µg/kg wet							
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.39	µg/kg wet							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.39	µg/kg wet							
Perfluoropentanesulfonic acid (PFPeS)	ND	0.39	µg/kg wet							
Perfluoroundecanoic acid (PFUnA)	ND	0.39	µg/kg wet							
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.39	µg/kg wet							
Perfluoroheptanoic acid (PFHpA)	ND	0.39	µg/kg wet							
Perfluorooctanoic acid (PFOA)	ND	0.39	µg/kg wet							
Perfluorooctanesulfonic acid (PFOS)	ND	0.39	µg/kg wet							
Perfluorononanoic acid (PFNA)	ND	0.39	µg/kg wet							

LCS (B294033-BS1)

Prepared: 11/09/21 Analyzed: 11/10/21

Perfluorobutanoic acid (PFBA)	1.89	0.38	µg/kg wet	2.12		89.1	71-135			
Perfluorobutanesulfonic acid (PFBS)	1.77	0.38	µg/kg wet	1.87		94.6	72-128			
Perfluoropentanoic acid (PFPeA)	1.91	0.38	µg/kg wet	2.12		90.2	69-132			
Perfluorohexanoic acid (PFHxA)	1.89	0.38	µg/kg wet	2.12		89.0	70-132			
11Cl-PF3OUdS (F53B Minor)	1.89	0.38	µg/kg wet	2.00		94.6	50-150			
9Cl-PF3ONS (F53B Major)	1.88	0.38	µg/kg wet	1.97		95.3	50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	1.94	0.38	µg/kg wet	2.00		97.4	50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	1.77	0.38	µg/kg wet	2.12		83.4	50-150			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	1.87	0.38	µg/kg wet	2.03		92.1	65-137			
Perfluorodecanoic acid (PFDA)	1.80	0.38	µg/kg wet	2.12		85.1	69-133			
Perfluorododecanoic acid (PFDoA)	1.82	0.38	µg/kg wet	2.12		85.8	69-135			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	1.90	0.38	µg/kg wet	1.89		101	50-150			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B294033 - SOP 465-PFAAS

LCS (B294033-BS1)

Prepared: 11/09/21 Analyzed: 11/10/21

Perfluoroheptanesulfonic acid (PFHpS)	1.97	0.38	µg/kg wet	2.03		97.1	70-132			
N-EtFOSAA	2.09	0.38	µg/kg wet	2.12		98.5	61-139			
N-MeFOSAA	2.13	0.38	µg/kg wet	2.12		100	63-144			
Perfluorotetradecanoic acid (PFTA)	1.91	0.38	µg/kg wet	2.12		90.1	69-133			
Perfluorotridecanoic acid (PFTrDA)	2.00	0.38	µg/kg wet	2.12		94.4	66-139			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.03	0.38	µg/kg wet	1.98		102	62-145			
Perfluorodecanesulfonic acid (PFDS)	1.90	0.38	µg/kg wet	2.04		93.2	59-134			
Perfluorooctanesulfonamide (FOSA)	1.83	0.38	µg/kg wet	2.12		86.2	67-137			
Perfluorononanesulfonic acid (PFNS)	2.08	0.38	µg/kg wet	2.03		102	69-125			
Perfluoro-1-hexanesulfonamide (FHxSA)	2.15	0.38	µg/kg wet	2.12		102	50-150			
Perfluoro-1-butanefulfonamide (FBSA)	2.05	0.38	µg/kg wet	2.12		96.8	50-150			
Perfluorohexanesulfonic acid (PFHxS)	1.81	0.38	µg/kg wet	1.93		93.9	67-130			
Perfluoro-4-oxapentanoic acid (PFMPA)	2.17	0.38	µg/kg wet	2.12		103	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	2.13	0.38	µg/kg wet	2.12		101	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.16	0.38	µg/kg wet	2.01		107	64-140			
Perfluoropentanesulfonic acid (PFPeS)	1.73	0.38	µg/kg wet	1.99		86.7	73-123			
Perfluoroundecanoic acid (PFUnA)	1.87	0.38	µg/kg wet	2.12		88.2	64-136			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.21	0.38	µg/kg wet	2.12		104	50-150			
Perfluoroheptanoic acid (PFHpA)	2.04	0.38	µg/kg wet	2.12		96.5	71-131			
Perfluorooctanoic acid (PFOA)	2.05	0.38	µg/kg wet	2.12		96.9	69-133			
Perfluorooctanesulfonic acid (PFOS)	1.89	0.38	µg/kg wet	1.96		96.5	68-136			
Perfluorononanoic acid (PFNA)	2.09	0.38	µg/kg wet	2.12		98.7	72-129			

Batch B294575 - SOP 465-PFAAS

Blank (B294575-BLK1)

Prepared: 11/13/21 Analyzed: 11/15/21

Perfluorobutanoic acid (PFBA)	ND	0.39	µg/kg wet							
Perfluorobutanesulfonic acid (PFBS)	ND	0.39	µg/kg wet							
Perfluoropentanoic acid (PFPeA)	ND	0.39	µg/kg wet							
Perfluorohexanoic acid (PFHxA)	ND	0.39	µg/kg wet							
11Cl-PF3OUdS (F53B Minor)	ND	0.39	µg/kg wet							
9Cl-PF3ONS (F53B Major)	ND	0.39	µg/kg wet							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.39	µg/kg wet							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.39	µg/kg wet							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.39	µg/kg wet							
Perfluorodecanoic acid (PFDA)	ND	0.39	µg/kg wet							
Perfluorododecanoic acid (PFDoA)	ND	0.39	µg/kg wet							
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.39	µg/kg wet							
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.39	µg/kg wet							
N-EtFOSAA	ND	0.39	µg/kg wet							
N-MeFOSAA	ND	0.39	µg/kg wet							
Perfluorotetradecanoic acid (PFTA)	ND	0.39	µg/kg wet							
Perfluorotridecanoic acid (PFTrDA)	ND	0.39	µg/kg wet							
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.39	µg/kg wet							
Perfluorodecanesulfonic acid (PFDS)	ND	0.39	µg/kg wet							
Perfluorooctanesulfonamide (FOSA)	ND	0.39	µg/kg wet							
Perfluorononanesulfonic acid (PFNS)	ND	0.39	µg/kg wet							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.39	µg/kg wet							
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.39	µg/kg wet							
Perfluorohexanesulfonic acid (PFHxS)	ND	0.39	µg/kg wet							

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B294575 - SOP 465-PFAAS										
Blank (B294575-BLK1)										
Prepared: 11/13/21 Analyzed: 11/15/21										
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.39	µg/kg wet							
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.39	µg/kg wet							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.39	µg/kg wet							
Perfluoropetanesulfonic acid (PFPeS)	ND	0.39	µg/kg wet							
Perfluoroundecanoic acid (PFUnA)	ND	0.39	µg/kg wet							
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.39	µg/kg wet							
Perfluoroheptanoic acid (PFHpA)	ND	0.39	µg/kg wet							
Perfluorooctanoic acid (PFOA)	ND	0.39	µg/kg wet							
Perfluorooctanesulfonic acid (PFOS)	ND	0.39	µg/kg wet							
Perfluorononanoic acid (PFNA)	ND	0.39	µg/kg wet							
LCS (B294575-BS1)										
Prepared: 11/13/21 Analyzed: 11/15/21										
Perfluorobutanoic acid (PFBA)	2.25	0.38	µg/kg wet	2.14		105	71-135			
Perfluorobutanesulfonic acid (PFBS)	2.09	0.38	µg/kg wet	1.89		111	72-128			
Perfluoropentanoic acid (PFPeA)	2.31	0.38	µg/kg wet	2.14		108	69-132			
Perfluorohexanoic acid (PFHxA)	2.25	0.38	µg/kg wet	2.14		105	70-132			
11Cl-PF3OUdS (F53B Minor)	2.32	0.38	µg/kg wet	2.01		115	50-150			
9Cl-PF3ONS (F53B Major)	2.59	0.38	µg/kg wet	1.99		130	50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	2.15	0.38	µg/kg wet	2.01		107	50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	2.46	0.38	µg/kg wet	2.14		115	50-150			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	2.44	0.38	µg/kg wet	2.05		119	65-137			
Perfluorodecanoic acid (PFDA)	2.22	0.38	µg/kg wet	2.14		104	69-133			
Perfluorododecanoic acid (PFDoA)	2.44	0.38	µg/kg wet	2.14		114	69-135			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	2.22	0.38	µg/kg wet	1.90		117	50-150			
Perfluoroheptanesulfonic acid (PFHpS)	2.35	0.38	µg/kg wet	2.04		115	70-132			
N-EtFOSAA	2.77	0.38	µg/kg wet	2.14		129	61-139			
N-MeFOSAA	2.80	0.38	µg/kg wet	2.14		131	63-144			
Perfluorotetradecanoic acid (PFTA)	2.07	0.38	µg/kg wet	2.14		96.8	69-133			
Perfluorotridecanoic acid (PFTrDA)	2.13	0.38	µg/kg wet	2.14		99.7	66-139			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.20	0.38	µg/kg wet	2.00		110	62-145			
Perfluorodecanesulfonic acid (PFDS)	2.54	0.38	µg/kg wet	2.06		123	59-134			
Perfluorooctanesulfonamide (FOSA)	2.19	0.38	µg/kg wet	2.14		103	67-137			
Perfluorononanesulfonic acid (PFNS)	2.67	0.38	µg/kg wet	2.05		130	69-125	*		L-01
Perfluoro-1-hexanesulfonamide (FHxSA)	2.29	0.38	µg/kg wet	2.14		107	50-150			
Perfluoro-1-butanesulfonamide (FBSA)	2.42	0.38	µg/kg wet	2.14		113	50-150			
Perfluorohexanesulfonic acid (PFHxS)	1.96	0.38	µg/kg wet	1.94		101	67-130			
Perfluoro-4-oxapentanoic acid (PFMPA)	2.40	0.38	µg/kg wet	2.14		113	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	2.28	0.38	µg/kg wet	2.14		107	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.55	0.38	µg/kg wet	2.03		126	64-140			
Perfluoropetanesulfonic acid (PFPeS)	1.95	0.38	µg/kg wet	2.01		97.4	73-123			
Perfluoroundecanoic acid (PFUnA)	2.10	0.38	µg/kg wet	2.14		98.1	64-136			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.40	0.38	µg/kg wet	2.14		113	50-150			
Perfluoroheptanoic acid (PFHpA)	2.28	0.38	µg/kg wet	2.14		107	71-131			
Perfluorooctanoic acid (PFOA)	2.28	0.38	µg/kg wet	2.14		107	69-133			
Perfluorooctanesulfonic acid (PFOS)	2.21	0.38	µg/kg wet	1.97		112	68-136			
Perfluorononanoic acid (PFNA)	2.26	0.38	µg/kg wet	2.14		106	72-129			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
L-01	Laboratory fortified blank/laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.
PF-17	Extracted Internal Standard recovery is outside of control limits. Data is not significantly affected since associated analyte is not detected and bias is on the high side.
Z-01	Sample prepared and extracted at a dilution.

ANALYST

STATION PDF Management Station
JFC James F. Constantino
JLH Jessica L. Hoffman
EGR Evett G Rivera
AP Alan Pienkowski

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN S-6A (0-12) (21J1946-01)			Lab File ID: 21J1946-01.d			Analyzed: 11/10/21 19:36			
M8FOSA	392762.7	4.044517	393,192.00	4.044517	100	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	234653.9	2.636617	160,692.00	2.644867	146	50 - 150	-0.0082	+/-0.50	
M2PFTA	1848653	4.394667	1,595,192.00	4.39465	116	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	556972.8	3.866833	226,739.00	3.866833	246	50 - 150	0.0000	+/-0.50	*
MPFBA	677966.6	1.12495	677,435.00	1.116633	100	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	238471.3	2.945967	230,491.00	2.954083	103	50 - 150	-0.0081	+/-0.50	
M6PFDA	1082268	3.867333	1,018,454.00	3.867333	106	50 - 150	0.0000	+/-0.50	
M3PFBS	171162.4	2.011067	149,326.00	2.019367	115	50 - 150	-0.0083	+/-0.50	
M7PFUnA	1500049	4.009984	1,365,067.00	4.017967	110	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	243750.9	3.509617	118,861.00	3.509617	205	50 - 150	0.0000	+/-0.50	*
M5PFPeA	715543.4	1.824517	668,163.00	1.8328	107	50 - 150	-0.0083	+/-0.50	
M5PFHxA	997560.9	2.722683	913,090.00	2.730867	109	50 - 150	-0.0082	+/-0.50	
M3PFHxS	137170.9	3.28425	123,606.00	3.2923	111	50 - 150	-0.0080	+/-0.50	
M4PFHpA	1030229	3.251867	947,771.00	3.25995	109	50 - 150	-0.0081	+/-0.50	
M8PFOA	989248.2	3.51815	1,002,525.00	3.526133	99	50 - 150	-0.0080	+/-0.50	
M8PFOS	141402.3	3.708283	132,723.00	3.708283	107	50 - 150	0.0000	+/-0.50	
M9PFNA	896601.4	3.709283	902,256.00	3.709283	99	50 - 150	0.0000	+/-0.50	
MPFDoA	1519544	4.153117	1,387,824.00	4.153117	109	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	354546.8	4.01745	302,650.00	4.025434	117	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	321481.7	3.937867	280,463.00	3.945867	115	50 - 150	-0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN Basement 1 (6-8) (21J1946-02)			Lab File ID: 21J1946-02.d			Analyzed: 11/10/21 19:43			
M8FOSA	447391.6	4.044517	393,192.00	4.044517	114	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	153787.2	2.636633	160,692.00	2.644867	96	50 - 150	-0.0082	+/-0.50	
M2PFTA	1883886	4.394667	1,595,192.00	4.39465	118	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	210353.6	3.866833	226,739.00	3.866833	93	50 - 150	0.0000	+/-0.50	
MPFBA	725557.9	1.116633	677,435.00	1.116633	107	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	258691.7	2.954083	230,491.00	2.954083	112	50 - 150	0.0000	+/-0.50	
M6PFDA	1171994	3.867333	1,018,454.00	3.867333	115	50 - 150	0.0000	+/-0.50	
M3PFBS	179727.1	2.011067	149,326.00	2.019367	120	50 - 150	-0.0083	+/-0.50	
M7PFUnA	1518235	4.009984	1,365,067.00	4.017967	111	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	106761.5	3.509617	118,861.00	3.509617	90	50 - 150	0.0000	+/-0.50	
M5PFPeA	753421.3	1.824517	668,163.00	1.8328	113	50 - 150	-0.0083	+/-0.50	
M5PFHxA	1029408	2.722683	913,090.00	2.730867	113	50 - 150	-0.0082	+/-0.50	
M3PFHxS	144150.4	3.28425	123,606.00	3.2923	117	50 - 150	-0.0080	+/-0.50	
M4PFHpA	1094039	3.25995	947,771.00	3.25995	115	50 - 150	0.0000	+/-0.50	
M8PFOA	1088146	3.51815	1,002,525.00	3.526133	109	50 - 150	-0.0080	+/-0.50	
M8PFOS	151878.4	3.708283	132,723.00	3.708283	114	50 - 150	0.0000	+/-0.50	
M9PFNA	952383.6	3.709283	902,256.00	3.709283	106	50 - 150	0.0000	+/-0.50	
MPFDoA	1498584	4.153117	1,387,824.00	4.153117	108	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	299129.6	4.01745	302,650.00	4.025434	99	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	294081.9	3.937867	280,463.00	3.945867	105	50 - 150	-0.0080	+/-0.50	
30MTN Basement 1 (6-8) (21J1946-02RE1)			Lab File ID: 21J1946-02RE1.d			Analyzed: 11/15/21 19:20			
M8PFOS	141097.8	3.724233	107,190.00	3.724233	132	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN Basement 2 (6-12) (21J1946-03)			Lab File ID: 21J1946-03.d			Analyzed: 11/10/21 19:50			
M8FOSA	390043.6	4.044517	393,192.00	4.044517	99	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	160213.4	2.636633	160,692.00	2.644867	100	50 - 150	-0.0082	+/-0.50	
M2PFTA	1807949	4.39465	1,595,192.00	4.39465	113	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	193124	3.866833	226,739.00	3.866833	85	50 - 150	0.0000	+/-0.50	
MPFBA	686207.8	1.116633	677,435.00	1.116633	101	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	244932.6	2.945967	230,491.00	2.954083	106	50 - 150	-0.0081	+/-0.50	
M6PFDA	1048333	3.867333	1,018,454.00	3.867333	103	50 - 150	0.0000	+/-0.50	
M3PFBS	162945.2	2.019367	149,326.00	2.019367	109	50 - 150	0.0000	+/-0.50	
M7PFUnA	1343534	4.009984	1,365,067.00	4.017967	98	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	110241.7	3.509617	118,861.00	3.509617	93	50 - 150	0.0000	+/-0.50	
M5PFPeA	695699.1	1.824517	668,163.00	1.8328	104	50 - 150	-0.0083	+/-0.50	
M5PFHxA	953459.9	2.722683	913,090.00	2.730867	104	50 - 150	-0.0082	+/-0.50	
M3PFHxS	128526.6	3.28425	123,606.00	3.2923	104	50 - 150	-0.0080	+/-0.50	
M4PFHpA	1002240	3.25995	947,771.00	3.25995	106	50 - 150	0.0000	+/-0.50	
M8PFOA	979854.3	3.51815	1,002,525.00	3.526133	98	50 - 150	-0.0080	+/-0.50	
M8PFOS	151848.6	3.708283	132,723.00	3.708283	114	50 - 150	0.0000	+/-0.50	
M9PFNA	997505.8	3.709283	902,256.00	3.709283	111	50 - 150	0.0000	+/-0.50	
MPFDoA	1444393	4.153117	1,387,824.00	4.153117	104	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	278740.2	4.01745	302,650.00	4.025434	92	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	300501.6	3.937867	280,463.00	3.945867	107	50 - 150	-0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B294033-BLK1)			Lab File ID: B294033-BLK1.d			Analyzed: 11/10/21 19:14			
M8FOSA	429016.3	4.044517	393,192.00	4.044517	109	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	177817.3	2.636617	160,692.00	2.644867	111	50 - 150	-0.0082	+/-0.50	
M2PFTA	1578890	4.39465	1,595,192.00	4.39465	99	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	205446.4	3.866833	226,739.00	3.866833	91	50 - 150	0.0000	+/-0.50	
MPFBA	706423.2	1.116633	677,435.00	1.116633	104	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	265918.4	2.954083	230,491.00	2.954083	115	50 - 150	0.0000	+/-0.50	
M6PFDA	1102411	3.867333	1,018,454.00	3.867333	108	50 - 150	0.0000	+/-0.50	
M3PFBS	159121.3	2.019367	149,326.00	2.019367	107	50 - 150	0.0000	+/-0.50	
M7PFUnA	1385367	4.009984	1,365,067.00	4.017967	101	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	117891.1	3.509617	118,861.00	3.509617	99	50 - 150	0.0000	+/-0.50	
M5PFPeA	696645.8	1.824517	668,163.00	1.8328	104	50 - 150	-0.0083	+/-0.50	
M5PFHxA	974444.4	2.730867	913,090.00	2.730867	107	50 - 150	0.0000	+/-0.50	
M3PFHxS	130763.8	3.28425	123,606.00	3.2923	106	50 - 150	-0.0080	+/-0.50	
M4PFHpA	1002456	3.25995	947,771.00	3.25995	106	50 - 150	0.0000	+/-0.50	
M8PFOA	991618.7	3.526133	1,002,525.00	3.526133	99	50 - 150	0.0000	+/-0.50	
M8PFOS	149775.8	3.708283	132,723.00	3.708283	113	50 - 150	0.0000	+/-0.50	
M9PFNA	1028584	3.709283	902,256.00	3.709283	114	50 - 150	0.0000	+/-0.50	
MPFDoA	1414039	4.153117	1,387,824.00	4.153117	102	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	267962	4.01745	302,650.00	4.025434	89	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	271198.5	3.945867	280,463.00	3.945867	97	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B294033-BS1)			Lab File ID: B294033-BS1.d			Analyzed: 11/10/21 19:07			
M8FOSA	507811.9	4.044517	393,192.00	4.044517	129	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	201720	2.636633	160,692.00	2.644867	126	50 - 150	-0.0082	+/-0.50	
M2PFTA	1920522	4.394667	1,595,192.00	4.39465	120	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	228061	3.866833	226,739.00	3.866833	101	50 - 150	0.0000	+/-0.50	
MPFBA	819892.8	1.116633	677,435.00	1.116633	121	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	293902.4	2.954083	230,491.00	2.954083	128	50 - 150	0.0000	+/-0.50	
M6PFDA	1276603	3.867333	1,018,454.00	3.867333	125	50 - 150	0.0000	+/-0.50	
M3PFBS	195916.2	2.019367	149,326.00	2.019367	131	50 - 150	0.0000	+/-0.50	
M7PFUnA	1573698	4.009984	1,365,067.00	4.017967	115	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	137275.6	3.509617	118,861.00	3.509617	115	50 - 150	0.0000	+/-0.50	
M5PFPeA	812180	1.824517	668,163.00	1.8328	122	50 - 150	-0.0083	+/-0.50	
M5PFHxA	1130201	2.730867	913,090.00	2.730867	124	50 - 150	0.0000	+/-0.50	
M3PFHxS	156806.5	3.2923	123,606.00	3.2923	127	50 - 150	0.0000	+/-0.50	
M4PFHpA	1173305	3.25995	947,771.00	3.25995	124	50 - 150	0.0000	+/-0.50	
M8PFOA	1213635	3.526133	1,002,525.00	3.526133	121	50 - 150	0.0000	+/-0.50	
M8PFOS	177309.4	3.708283	132,723.00	3.708283	134	50 - 150	0.0000	+/-0.50	
M9PFNA	1134643	3.709283	902,256.00	3.709283	126	50 - 150	0.0000	+/-0.50	
MPFDoA	1728049	4.153117	1,387,824.00	4.153117	125	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	300634.3	4.01745	302,650.00	4.025434	99	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	318777.5	3.945867	280,463.00	3.945867	114	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B294575-BLK1)			Lab File ID: B294575-BLK1.d			Analyzed: 11/15/21 18:58			
M8FOSA	407379.8	4.052516	311,249.00	4.052516	131	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	115365.3	2.678933	128,851.00	2.678933	90	50 - 150	0.0000	+/-0.50	
M2PFTA	1661229	4.4109	1,273,177.00	4.4109	130	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	141318.8	3.88305	145,046.00	3.88305	97	50 - 150	0.0000	+/-0.50	
MPFBA	678491	1.13325	515,200.00	1.13325	132	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	214410.4	2.978433	179,402.00	2.978433	120	50 - 150	0.0000	+/-0.50	
M6PFDA	1066047	3.883567	788,638.00	3.883567	135	50 - 150	0.0000	+/-0.50	
M3PFBS	153635.5	2.054933	117,778.00	2.044217	130	50 - 150	0.0107	+/-0.50	
M7PFUnA	1337448	4.03395	977,512.00	4.033967	137	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	77325.73	3.533583	83,394.00	3.5336	93	50 - 150	0.0000	+/-0.50	
M5PFPeA	676308.7	1.857667	516,196.00	1.857667	131	50 - 150	0.0000	+/-0.50	
M5PFHxA	957237.7	2.763583	711,163.00	2.763583	135	50 - 150	0.0000	+/-0.50	
M3PFHxS	128407.5	3.308383	92,621.00	3.308383	139	50 - 150	0.0000	+/-0.50	
M4PFHpA	994516	3.27725	719,839.00	3.27725	138	50 - 150	0.0000	+/-0.50	
M8PFOA	1014359	3.542117	739,739.00	3.542117	137	50 - 150	0.0000	+/-0.50	
M8PFOS	155679.5	3.724217	107,190.00	3.724233	145	50 - 150	0.0000	+/-0.50	
M9PFNA	1003805	3.725217	748,112.00	3.725217	134	50 - 150	0.0000	+/-0.50	
MPFDoA	1423902	4.169267	1,035,336.00	4.169267	138	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	225845.1	4.041433	196,430.00	4.041433	115	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	235990.4	3.96185	185,650.00	3.96185	127	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B294575-BS1) Lab File ID: B294575-BS1.d Analyzed: 11/15/21 18:51									
M8FOSA	383667.2	4.052516	311,249.00	4.052516	123	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	103122.5	2.678933	128,851.00	2.678933	80	50 - 150	0.0000	+/-0.50	
M2PFTA	1641409	4.4109	1,273,177.00	4.4109	129	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	129779.3	3.88305	145,046.00	3.88305	89	50 - 150	0.0000	+/-0.50	
MPFBA	667425.6	1.13325	515,200.00	1.13325	130	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	200409.4	2.978433	179,402.00	2.978433	112	50 - 150	0.0000	+/-0.50	
M6PFDA	965228.1	3.883567	788,638.00	3.883567	122	50 - 150	0.0000	+/-0.50	
M3PFBS	144162.7	2.054933	117,778.00	2.044217	122	50 - 150	0.0107	+/-0.50	
M7PFUnA	1287194	4.033967	977,512.00	4.033967	132	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	78842.82	3.5336	83,394.00	3.5336	95	50 - 150	0.0000	+/-0.50	
M5PFPeA	649074.2	1.857667	516,196.00	1.857667	126	50 - 150	0.0000	+/-0.50	
M5PFHxA	902005.6	2.763583	711,163.00	2.763583	127	50 - 150	0.0000	+/-0.50	
M3PFHxS	123580	3.308383	92,621.00	3.308383	133	50 - 150	0.0000	+/-0.50	
M4PFHpA	932019.6	3.27725	719,839.00	3.27725	129	50 - 150	0.0000	+/-0.50	
M8PFOA	942549.8	3.542117	739,739.00	3.542117	127	50 - 150	0.0000	+/-0.50	
M8PFOS	134067.1	3.724233	107,190.00	3.724233	125	50 - 150	0.0000	+/-0.50	
M9PFNA	962039.8	3.725217	748,112.00	3.725217	129	50 - 150	0.0000	+/-0.50	
MPFDoA	1323406	4.169267	1,035,336.00	4.169267	128	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	218255.2	4.041433	196,430.00	4.041433	111	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	217418.1	3.96185	185,650.00	3.96185	117	50 - 150	0.0000	+/-0.50	

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065227-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	450	0.8628989	0.8489657		-10.1	30
Perfluorobutanesulfonic acid (PFBS)	A	444	405	0.9900012	0.9656811		-8.8	30
Perfluoropentanoic acid (PFPeA)	A	500	443	0.9353824	0.9067352		-11.3	30
Perfluorohexanoic acid (PFHxA)	A	500	436	0.86678	0.8404228		-12.7	30
11Cl-PF3OUdS (F53B Minor)	A	472	438	1.835659	1.72255		-7.3	30
9Cl-PF3ONS (F53B Major)	A	466	482	3.897292	4.025215		3.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	447	1.602632	1.605774		-5.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	352	2.979159	0.1023471		-29.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	504	0.7665044	0.8972762		5.1	30
Perfluorodecanoic acid (PFDA)	A	500	458	0.929213	0.9496842		-8.3	30
Perfluorododecanoic acid (PFDoA)	A	500	435	0.9361562	0.8696535		-13.1	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	431	3.93233	3.727938		-3.2	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	520	0.4568315	0.5108367		9.2	30
N-EtFOSAA	A	500	430	0.9836556	0.8555917		-13.9	30
N-MeFOSAA	A	500	457	1.027301	1.04289		-8.6	30
Perfluorotetradecanoic acid (PFTA)	A	500	453	0.8542676	0.868046		-9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	500	449	1.009812	1.021105		-10.2	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	457	1.061084	1.137973		-2.3	30
Perfluorodecanesulfonic acid (PFDS)	A	482	495	0.6287667	0.6661969		2.6	30
Perfluorooctanesulfonamide (FOSA)	A	500	476	0.8334166	0.8758551		-4.7	30
Perfluorononanesulfonic acid (PFNS)	A	481	479	0.319818	0.3223431		-0.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	478	0.3462983	0.3157572		-4.4	30
Perfluoro-1-butanefulfonamide (FBSA)	A	500	442	0.3044628	0.2916464		-11.5	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	468	0.9652933	1.058429		2.3	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	484	0.495495	0.4789839		-3.3	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	486	0.5879048	0.5703637		-2.8	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	435	1.004025	0.9984949		-8.6	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	392	0.9760894	0.9038583		-16.6	30
Perfluoroundecanoic acid (PFUnA)	A	500	444	0.8528971	0.8321599		-11.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	486	0.3237613	0.3176499		-2.9	30
Perfluoroheptanoic acid (PFHpA)	A	500	501	0.9139933	0.918039		0.1	30
Perfluorooctanoic acid (PFOA)	A	500	507	0.8653288	0.8815278		1.4	30
Perfluorooctanesulfonic acid (PFOS)	A	464	485	0.9382121	1.048587		4.6	30
Perfluorononanoic acid (PFNA)	A	500	478	0.938444	0.9234035		-4.3	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065227-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2280	0.8628989	0.8618408		-8.7	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2140	0.9900012	1.018693		-3.8	30
Perfluoropentanoic acid (PFPeA)	A	2500	2310	0.9353824	0.9432757		-7.8	30
Perfluorohexanoic acid (PFHxA)	A	2500	2260	0.86678	0.8716131		-9.5	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2400	1.835659	1.907195		1.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2280	3.897292	3.837298		-2.3	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2310	1.602632	1.659407		-2.2	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2080	2.979159	0.1219468		-16.8	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2640	0.7665044	0.927793		9.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2130	0.929213	0.8807296		-15.0	30
Perfluorododecanoic acid (PFDoA)	A	2500	2330	0.9361562	0.9308634		-7.0	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2210	3.93233	3.859621		-0.6	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2360	0.4568315	0.4644542		-0.8	30
N-EtFOSAA	A	2500	2130	0.9836556	0.8500816		-14.8	30
N-MeFOSAA	A	2500	2420	1.027301	1.106771		-3.1	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2500	0.8542676	0.9497799		-0.2	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2320	1.009812	1.048471		-7.1	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2340	0.6287667	0.630669		-2.8	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2400	1.061084	1.18086		2.5	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2180	0.8334166	0.7998474		-13.0	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2480	0.319818	0.3338849		3.2	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2700	0.3462983	0.3612544		7.9	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2380	0.3044628	0.3133032		-4.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2250	0.9652933	1.021989		-1.2	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2530	0.495495	0.5055786		1.4	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2520	0.5879048	0.5947084		0.7	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2710	1.004025	1.229334		14.0	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2140	0.9760894	0.9880106		-8.9	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2400	0.8528971	0.8972853		-4.2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2520	0.3237613	0.331833		0.9	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2390	0.9139933	0.8814377		-4.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2630	0.8653288	0.9226045		5.3	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2200	0.9382121	0.9489291		-5.3	30
Perfluorononanoic acid (PFNA)	A	2500	2410	0.938444	0.9321201		-3.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-466 PFAS

S065227-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2280	0.8628989	0.8627174		-8.6	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2120	0.9900012	1.009674		-4.7	30
Perfluoropentanoic acid (PFPeA)	A	2500	2300	0.9353824	0.9396125		-8.1	30
Perfluorohexanoic acid (PFHxA)	A	2500	2290	0.86678	0.8807092		-8.5	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2490	1.835659	1.980942		5.7	30
9Cl-PF3ONS (F53B Major)	A	2330	2360	3.897292	3.985572		1.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2300	1.602632	1.651563		-2.6	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2280	2.979159	0.1339799		-8.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2580	0.7665044	0.9063477		7.3	30
Perfluorodecanoic acid (PFDA)	A	2500	2150	0.929213	0.8915286		-13.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2300	0.9361562	0.9185763		-8.2	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2230	3.93233	3.904836		0.5	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2530	0.4568315	0.4978434		6.4	30
N-EtFOSAA	A	2500	2330	0.9836556	0.930092		-6.9	30
N-MeFOSAA	A	2500	2490	1.027301	1.137612		-0.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2320	0.8542676	0.8827306		-7.3	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2240	1.009812	1.011825		-10.3	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2540	0.6287667	0.6851027		5.5	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2520	1.061084	1.239847		7.7	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2320	0.8334166	0.8529206		-7.2	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2590	0.319818	0.3485505		7.7	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2680	0.3462983	0.3586661		7.1	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2470	0.3044628	0.325184		-1.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2150	0.9652933	0.9774449		-5.5	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2560	0.495495	0.5097064		2.2	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2510	0.5879048	0.5927361		0.4	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2510	1.004025	1.139366		5.5	30
Perfluoropetanesulfonic acid (PFPeS)	A	2350	2020	0.9760894	0.9342668		-13.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2370	0.8528971	0.8885365		-5.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2560	0.3237613	0.3372505		2.5	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2510	0.9139933	0.928189		0.6	30
Perfluorooctanoic acid (PFOA)	A	2500	2520	0.8653288	0.8813973		0.6	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2390	0.9382121	1.03376		3.1	30
Perfluorononanoic acid (PFNA)	A	2500	2470	0.938444	0.9576319		-1.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065227-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2300	0.8628989	0.8686579		-8.0	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2150	0.9900012	1.024446		-3.3	30
Perfluoropentanoic acid (PFPeA)	A	2500	2290	0.9353824	0.9378871		-8.3	30
Perfluorohexanoic acid (PFHxA)	A	2500	2230	0.86678	0.8576055		-10.9	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2550	1.835659	2.029106		8.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2470	3.897292	4.164699		5.9	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2180	1.602632	1.56709		-7.6	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2430	2.979159	0.1428931		-2.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2620	0.7665044	0.9229413		9.3	30
Perfluorodecanoic acid (PFDA)	A	2500	2040	0.929213	0.8449366		-18.4	30
Perfluorododecanoic acid (PFDoA)	A	2500	2430	0.9361562	0.9731098		-2.7	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2240	3.93233	3.910779		0.7	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2610	0.4568315	0.5133596		9.7	30
N-EtFOSAA	A	2500	2460	0.9836556	0.9846493		-1.4	30
N-MeFOSAA	A	2500	2230	1.027301	1.016687		-10.9	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2370	0.8542676	0.9031416		-5.1	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2410	1.009812	1.08576		-3.7	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2390	0.6287667	0.6439266		-0.8	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2380	1.061084	1.173226		1.8	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2290	0.8334166	0.8408944		-8.5	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2670	0.319818	0.3605046		11.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2670	0.3462983	0.357133		6.7	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2410	0.3044628	0.3177454		-3.6	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2270	0.9652933	1.029951		-0.4	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2540	0.495495	0.5056773		1.4	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2510	0.5879048	0.5923859		0.3	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2550	1.004025	1.154091		6.9	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2220	0.9760894	1.023935		-5.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2320	0.8528971	0.8700407		-7.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2580	0.3237613	0.3401819		3.4	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2500	0.9139933	0.9242896		0.2	30
Perfluorooctanoic acid (PFOA)	A	2500	2550	0.8653288	0.8934024		2.0	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2280	0.9382121	0.986571		-1.6	30
Perfluorononanoic acid (PFNA)	A	2500	2260	0.938444	0.8753864		-9.6	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065402-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2570	0.9425179	1.011857		2.7	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2310	1.102869	1.175854		4.2	30
Perfluoropentanoic acid (PFPeA)	A	2500	2590	0.9976624	1.078183		3.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2610	0.9419225	1.032034		4.2	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2670	1.989388	2.284809		13.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2890	4.109336	4.697106		24.2	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2400	1.848187	1.962565		1.8	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2540	0.1671191	0.1714838		1.4	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2480	0.8882675	0.9869106		3.4	30
Perfluorodecanoic acid (PFDA)	A	2500	2470	1.018422	1.090713		-1.3	30
Perfluorododecanoic acid (PFDoA)	A	2500	2630	1.020538	1.124969		5.2	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2360	4.320325	4.516334		6.2	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2480	0.4851688	0.5342313		4.4	30
N-EtFOSAA	A	2500	2480	1.041633	1.051849		-0.7	30
N-MeFOSAA	A	2500	2800	1.161219	1.332719		12.2	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2460	0.9728168	1.046993		-1.8	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2330	1.116887	1.194674		-6.9	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2810	0.7418148	0.8124729		16.7	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2570	1.197741	1.431409		10.0	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2490	0.9174711	0.9757214		-0.5	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2910	0.344215	0.3973688		21.2	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2520	0.3814328	0.3945368		1.0	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2710	0.3389618	0.3771353		8.5	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2480	1.118146	1.25817		8.9	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2630	0.5740932	0.6113184		5.4	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2630	0.6683914	0.7138265		5.1	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2850	1.148433	1.479325		19.9	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2360	1.102015	1.20024		0.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2550	0.9600985	1.031645		2.0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2650	0.3650421	0.396832		6.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2570	1.016118	1.0509		2.9	30
Perfluorooctanoic acid (PFOA)	A	2500	2620	0.9817944	1.026899		4.6	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2510	1.026673	1.141418		8.2	30
Perfluorononanoic acid (PFNA)	A	2500	2500	1.065202	1.104545		0.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-466 PFAS

S065402-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	446	0.9425179	0.8789602		-10.8	30
Perfluorobutanesulfonic acid (PFBS)	A	444	402	1.102869	1.022925		-9.4	30
Perfluoropentanoic acid (PFPeA)	A	500	435	0.9976624	0.9074633		-12.9	30
Perfluorohexanoic acid (PFHxA)	A	500	449	0.9419225	0.8895279		-10.2	30
11Cl-PF3OUdS (F53B Minor)	A	472	504	1.989388	2.149439		6.9	30
9Cl-PF3ONS (F53B Major)	A	466	461	4.109336	3.690343		-1.2	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	413	1.848187	1.687261		-12.4	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	460	0.1671191	0.1556009		-8.0	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	440	0.8882675	0.8879173		-8.3	30
Perfluorodecanoic acid (PFDA)	A	500	420	1.018422	0.9281777		-16.0	30
Perfluorododecanoic acid (PFDoA)	A	500	479	1.020538	1.024659		-4.1	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	419	4.320325	3.974917		-5.8	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	416	0.4851688	0.4488362		-12.5	30
N-EtFOSAA	A	500	506	1.041633	1.070729		1.2	30
N-MeFOSAA	A	500	444	1.161219	1.055627		-11.2	30
Perfluorotetradecanoic acid (PFTA)	A	500	417	0.9728168	0.8937684		-16.6	30
Perfluorotridecanoic acid (PFTrDA)	A	500	414	1.116887	1.072322		-17.1	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	427	1.197741	1.207059		-8.7	30
Perfluorodecanesulfonic acid (PFDS)	A	482	457	0.7418148	0.6594825		-5.2	30
Perfluorooctanesulfonamide (FOSA)	A	500	431	0.9174711	0.8448865		-13.9	30
Perfluorononanesulfonic acid (PFNS)	A	481	474	0.344215	0.3232718		-1.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	457	0.3814328	0.3555244		-8.7	30
Perfluoro-1-butanefulfonamide (FBSA)	A	500	446	0.3389618	0.3101889		-10.8	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	412	1.118146	1.04135		-9.8	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	444	0.5740932	0.5126891		-11.2	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	447	0.6683914	0.6048896		-10.6	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	410	1.148433	1.081922		-13.9	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	387	1.102015	0.9826578		-17.7	30
Perfluoroundecanoic acid (PFUnA)	A	500	443	0.9600985	0.8955856		-11.5	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	443	0.3650421	0.3302945		-11.4	30
Perfluoroheptanoic acid (PFHpA)	A	500	472	1.016118	0.9595584		-5.6	30
Perfluorooctanoic acid (PFOA)	A	500	424	0.9817944	0.828537		-15.3	30
Perfluorooctanesulfonic acid (PFOS)	A	464	395	1.026673	0.8973727		-14.9	30
Perfluorononanoic acid (PFNA)	A	500	411	1.065202	0.9036428		-17.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-466 PFAS

S065402-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2530	0.9425179	0.9977771		1.2	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2360	1.102869	1.200694		6.4	30
Perfluoropentanoic acid (PFPeA)	A	2500	2610	0.9976624	1.089428		4.5	30
Perfluorohexanoic acid (PFHxA)	A	2500	2540	0.9419225	1.007325		1.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2570	1.989388	2.193781		8.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2680	4.109336	4.351819		15.2	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2330	1.848187	1.898803		-1.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2620	0.1671191	0.1769447		4.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2940	0.8882675	1.167213		22.7	30
Perfluorodecanoic acid (PFDA)	A	2500	2450	1.018422	1.080597		-2.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2570	1.020538	1.098246		2.7	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2440	4.320325	4.685802		10.1	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2560	0.4851688	0.5513349		7.7	30
N-EtFOSAA	A	2500	2540	1.041633	1.077962		1.7	30
N-MeFOSAA	A	2500	2520	1.161219	1.198943		0.9	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2380	0.9728168	1.015122		-4.8	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2580	1.116887	1.321682		3.1	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2480	1.197741	1.381802		6.1	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2960	0.7418148	0.8545083		22.8	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2360	0.9174711	0.9252214		-5.7	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2530	0.344215	0.3454506		5.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2620	0.3814328	0.410242		5.0	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2680	0.3389618	0.3730186		7.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2240	1.118146	1.134301		-1.8	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2600	0.5740932	0.602609		3.9	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2600	0.6683914	0.7054736		3.9	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2460	1.148433	1.278571		3.3	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2220	1.102015	1.129944		-5.3	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2540	0.9600985	1.026172		1.4	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2660	0.3650421	0.3976419		6.3	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2580	1.016118	1.052481		3.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2600	0.9817944	1.019889		3.9	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2340	1.026673	1.065314		1.0	30
Perfluorononanoic acid (PFNA)	A	2500	2580	1.065202	1.135928		3.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065402-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2560	0.9425179	1.009928		2.5	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2360	1.102869	1.200238		6.3	30
Perfluoropentanoic acid (PFPeA)	A	2500	2580	0.9976624	1.077524		3.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2540	0.9419225	1.006907		1.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2670	1.989388	2.27877		13.0	30
9Cl-PF3ONS (F53B Major)	A	2330	2620	4.109336	4.243458		12.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2260	1.848187	1.848178		-4.1	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2500	0.1671191	0.169153		0.03	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2860	0.8882675	1.136286		19.3	30
Perfluorodecanoic acid (PFDA)	A	2500	2370	1.018422	1.046007		-5.3	30
Perfluorododecanoic acid (PFDoA)	A	2500	2680	1.020538	1.147235		7.3	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2410	4.320325	4.610632		8.4	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2470	0.4851688	0.5302567		3.6	30
N-EtFOSAA	A	2500	3050	1.041633	1.294824		22.1	30
N-MeFOSAA	A	2500	2720	1.161219	1.291607		8.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2480	0.9728168	1.058837		-0.7	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2610	1.116887	1.340955		4.6	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2490	1.197741	1.383167		6.2	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2810	0.7418148	0.8109223		16.5	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2460	0.9174711	0.9641574		-1.7	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2860	0.344215	0.3914161		19.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2400	0.3814328	0.3750717		-4.0	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2670	0.3389618	0.3708676		6.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2230	1.118146	1.131498		-2.0	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2590	0.5740932	0.6010995		3.6	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2570	0.6683914	0.6991464		3.0	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2780	1.148433	1.440807		16.7	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2330	1.102015	1.181506		-1.0	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2550	0.9600985	1.0338		2.2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2590	0.3650421	0.3873781		3.6	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2650	1.016118	1.083714		6.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2580	0.9817944	1.011524		3.0	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2440	1.026673	1.1092		5.2	30
Perfluorononanoic acid (PFNA)	A	2500	2520	1.065202	1.112442		0.9	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SOP-466 PFAS in Soil</i>	
Perfluorobutanoic acid (PFBA)	NH-P
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluoropentanoic acid (PFPeA)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
11Cl-PF3OUdS (F53B Minor)	NH-P
9Cl-PF3ONS (F53B Major)	NH-P
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P
8:2 Fluorotelomersulfonic acid (8:2FTS A)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	NH-P
Perfluoroheptanesulfonic acid (PFHpS)	NH-P
N-EtFOSAA	NH-P
N-MeFOSAA	NH-P
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
4:2 Fluorotelomersulfonic acid (4:2FTS A)	NH-P
Perfluorodecanesulfonic acid (PFDS)	NH-P
Perfluorooctanesulfonamide (FOSA)	NH-P
Perfluorononanesulfonic acid (PFNS)	NH-P
Perfluoro-1-hexanesulfonamide (FHxSA)	NH-P
Perfluoro-1-butanefulfonamide (FBSA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
Perfluoro-4-oxapentanoic acid (PFMPA)	NH-P
Perfluoro-5-oxahexanoic acid (PFMBA)	NH-P
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P
Perfluoropetanesulfonic acid (PFPeS)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
Tighe & Bond
120 Front Street, Worcester, MA 01610
Phone: 508-754-2201
Princeton Water Sampling
Princeton, MA
Project Number: P-0534017
Project Manager: Jeff Aps/Michael Scherer
Pace Analytical Quote Name/Number
Invoice Recipient: Tighe & Bond
Sampled By: M Scherer

7 Day 10-Day Field Filtered
PFAS 10-Day (std) Due Date:
1-Day 3-Day Field Filtered
2-Day 4-Day Lab to Filter
Format: PDF EXCEL
Other:
CLP Like Data Pkg Required:
Email To: mischerer@tighebond.com
Fax To #:

ANALYSIS REQUESTED

Pace Analytical Work Order #	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
1	30MTN S-6A (G-12)	10/29/21	0800	GRAB	SW	U					
2	30MTN Basement (G-8)		0830								
3	30MTN Basement 2 (G-10)		0700								

Client Comments: Please report the H compound list

Relinquished by: (signature) *[Signature]* Date/Time: 10/29/21 12:00
 Received by: (signature) *[Signature]* Date/Time: 10/29/21 18:20
 Relinquished by: (signature) *[Signature]* Date/Time: 10/29/21 20:35
 Received by: (signature) *[Signature]* Date/Time: 10/29/21 20:35
 Relinquished by: (signature) *[Signature]* Date/Time: 10/29/21 20:35
 Received by: (signature) *[Signature]* Date/Time:
 Relinquished by: (signature) *[Signature]* Date/Time:
 Received by: (signature) *[Signature]* Date/Time:

Special Requirements: MA MCP Required GW-1
 MCP Certification Form Required
 CE MCP Required
 RCP Certification Form Required
 MA State DW Required

Project Entity: Government Municipality WRTA
 Federal 21 J MWRA School
 City Brownfield MBTA

Other: Chromatogram
 AIPA-LAP, LLC

1 Preservation Code
Counter Use Only
Total Number Of:
VIALS _____
GLASS _____
PLASTIC _____
BACTERIA _____
ENCORE _____

Glassware in the fridge? Y / N _____
 Glassware in freezer? Y / N _____
 Prepackaged Cooler? Y / N _____
 *Pace Analytical is not responsible for missing samples from prepacked coolers

1 Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

2 Preservation Codes:
 1 = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
 H - High; M - Medium; L - Low; C - Clean; U - Unknown

MA State DW Required

Project Entity: Government Municipality WRTA
 Federal 21 J MWRA School
 City Brownfield MBTA

Other: Chromatogram
 AIPA-LAP, LLC

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T 5 B
 Received By MA Date 10/29/11 Time 2035
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 3.0
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? MA Were Samples Tampered with? MA
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? MA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? MA Acid _____ Base _____

	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	<u>3</u>	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Comments:

[Empty box for comments]

November 12, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

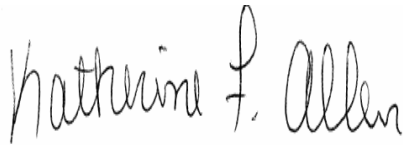
Project Location: 22 Mountain, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1947

Enclosed are results of analyses for samples as received by the laboratory on October 29, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 11/12/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1947

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 22 Mountain, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
22MTN Basement 1	21J1947-01	Soil		SM 2540G SOP-466 PFAS	
22MTN Basement 2	21J1947-02	Soil		SM 2540G SOP-466 PFAS	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Tod Kopycinski". The signature is written in a cursive style with a large, sweeping initial "T".

Tod E. Kopycinski
Laboratory Director

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1947

Date Received: 10/29/2021

Field Sample #: 22MTN Basement 1

Sampled: 10/29/2021 11:30

Sample ID: 21J1947-01

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.087	0.43	0.058	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.43	0.066	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.43	0.066	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.43	0.081	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.43	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
9Cl-PF3ONS (F53B Major)	ND	0.43	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.43	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.43	0.21	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.43	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluorodecanoic acid (PFDA)	0.090	0.43	0.056	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.43	0.066	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.43	0.071	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.43	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
N-EtFOSAA	ND	0.43	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
N-MeFOSAA	ND	0.43	0.079	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.43	0.082	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.43	0.097	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.43	0.080	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.43	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.43	0.084	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.43	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.43	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.43	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.43	0.069	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.43	0.081	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.43	0.080	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.43	0.099	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.43	0.063	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.43	0.079	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.43	0.067	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.43	0.062	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluorooctanoic acid (PFOA)	ND	0.43	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluorooctanesulfonic acid (PFOS)	0.40	0.43	0.058	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH
Perfluorononanoic acid (PFNA)	ND	0.43	0.071	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 19:57	BLH

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1947

Date Received: 10/29/2021

Field Sample #: 22MTN Basement 1

Sampled: 10/29/2021 11:30

Sample ID: 21J1947-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	92.2		% Wt	1		SM 2540G	11/11/21	11/12/21 9:06	WT

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1947

Date Received: 10/29/2021

Field Sample #: 22MTN Basement 2

Sampled: 10/29/2021 12:00

Sample ID: 21J1947-02

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.38	0.77	0.10	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluorobutanesulfonic acid (PFBS)	0.12	0.77	0.12	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluoropentanoic acid (PFPeA)	0.29	0.77	0.12	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.77	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.77	0.22	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
9Cl-PF3ONS (F53B Major)	ND	0.77	0.19	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.77	0.25	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.77	0.37	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.77	0.20	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluorodecanoic acid (PFDA)	ND	0.77	0.099	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluorododecanoic acid (PFDoA)	0.12	0.77	0.12	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.77	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.77	0.23	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
N-EtFOSAA	ND	0.77	0.22	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
N-MeFOSAA	ND	0.77	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.77	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.77	0.17	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.77	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.77	0.18	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.77	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.77	0.21	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.77	0.23	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.77	0.24	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluorohexanesulfonic acid (PFHxS)	0.13	0.77	0.12	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.77	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.77	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.77	0.18	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.77	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.77	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.77	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.77	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluorooctanoic acid (PFOA)	0.60	0.77	0.22	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluorooctanesulfonic acid (PFOS)	0.65	0.77	0.10	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH
Perfluorononanoic acid (PFNA)	ND	0.77	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:04	BLH

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1947

Date Received: 10/29/2021

Field Sample #: 22MTN Basement 2

Sampled: 10/29/2021 12:00

Sample ID: 21J1947-02

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	49.4		% Wt	1		SM 2540G	11/11/21	11/12/21 9:06	WT

Sample Extraction Data

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
21J1947-01 [22MTN Basement 1]	B294465	11/11/21
21J1947-02 [22MTN Basement 2]	B294465	11/11/21

Prep Method: SOP 465-PFAAS-SOP-466 PFAS

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21J1947-01 [22MTN Basement 1]	B294033	5.66	5.00	11/09/21
21J1947-02 [22MTN Basement 2]	B294033	5.91	5.00	11/09/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B294033 - SOP 465-PFAAS

Blank (B294033-BLK1)

Prepared: 11/09/21 Analyzed: 11/10/21

Perfluorobutanoic acid (PFBA)	ND	0.39	µg/kg wet							
Perfluorobutanesulfonic acid (PFBS)	ND	0.39	µg/kg wet							
Perfluoropentanoic acid (PFPeA)	ND	0.39	µg/kg wet							
Perfluorohexanoic acid (PFHxA)	ND	0.39	µg/kg wet							
11Cl-PF3OUdS (F53B Minor)	ND	0.39	µg/kg wet							
9Cl-PF3ONS (F53B Major)	ND	0.39	µg/kg wet							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.39	µg/kg wet							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.39	µg/kg wet							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.39	µg/kg wet							
Perfluorodecanoic acid (PFDA)	ND	0.39	µg/kg wet							
Perfluorododecanoic acid (PFDoA)	ND	0.39	µg/kg wet							
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.39	µg/kg wet							
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.39	µg/kg wet							
N-EtFOSAA	ND	0.39	µg/kg wet							
N-MeFOSAA	ND	0.39	µg/kg wet							
Perfluorotetradecanoic acid (PFTA)	ND	0.39	µg/kg wet							
Perfluorotridecanoic acid (PFTrDA)	ND	0.39	µg/kg wet							
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.39	µg/kg wet							
Perfluorodecanesulfonic acid (PFDS)	ND	0.39	µg/kg wet							
Perfluorooctanesulfonamide (FOSA)	ND	0.39	µg/kg wet							
Perfluorononanesulfonic acid (PFNS)	ND	0.39	µg/kg wet							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.39	µg/kg wet							
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.39	µg/kg wet							
Perfluorohexanesulfonic acid (PFHxS)	ND	0.39	µg/kg wet							
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.39	µg/kg wet							
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.39	µg/kg wet							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.39	µg/kg wet							
Perfluoropentanesulfonic acid (PFPeS)	ND	0.39	µg/kg wet							
Perfluoroundecanoic acid (PFUnA)	ND	0.39	µg/kg wet							
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.39	µg/kg wet							
Perfluoroheptanoic acid (PFHpA)	ND	0.39	µg/kg wet							
Perfluorooctanoic acid (PFOA)	ND	0.39	µg/kg wet							
Perfluorooctanesulfonic acid (PFOS)	ND	0.39	µg/kg wet							
Perfluorononanoic acid (PFNA)	ND	0.39	µg/kg wet							

LCS (B294033-BS1)

Prepared: 11/09/21 Analyzed: 11/10/21

Perfluorobutanoic acid (PFBA)	1.89	0.38	µg/kg wet	2.12		89.1	71-135			
Perfluorobutanesulfonic acid (PFBS)	1.77	0.38	µg/kg wet	1.87		94.6	72-128			
Perfluoropentanoic acid (PFPeA)	1.91	0.38	µg/kg wet	2.12		90.2	69-132			
Perfluorohexanoic acid (PFHxA)	1.89	0.38	µg/kg wet	2.12		89.0	70-132			
11Cl-PF3OUdS (F53B Minor)	1.89	0.38	µg/kg wet	2.00		94.6	50-150			
9Cl-PF3ONS (F53B Major)	1.88	0.38	µg/kg wet	1.97		95.3	50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	1.94	0.38	µg/kg wet	2.00		97.4	50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	1.77	0.38	µg/kg wet	2.12		83.4	50-150			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	1.87	0.38	µg/kg wet	2.03		92.1	65-137			
Perfluorodecanoic acid (PFDA)	1.80	0.38	µg/kg wet	2.12		85.1	69-133			
Perfluorododecanoic acid (PFDoA)	1.82	0.38	µg/kg wet	2.12		85.8	69-135			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	1.90	0.38	µg/kg wet	1.89		101	50-150			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B294033 - SOP 465-PFAAS										
LCS (B294033-BS1)										
					Prepared: 11/09/21 Analyzed: 11/10/21					
Perfluoroheptanesulfonic acid (PFHpS)	1.97	0.38	µg/kg wet	2.03		97.1	70-132			
N-EtFOSAA	2.09	0.38	µg/kg wet	2.12		98.5	61-139			
N-MeFOSAA	2.13	0.38	µg/kg wet	2.12		100	63-144			
Perfluorotetradecanoic acid (PFTA)	1.91	0.38	µg/kg wet	2.12		90.1	69-133			
Perfluorotridecanoic acid (PFTrDA)	2.00	0.38	µg/kg wet	2.12		94.4	66-139			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.03	0.38	µg/kg wet	1.98		102	62-145			
Perfluorodecanesulfonic acid (PFDS)	1.90	0.38	µg/kg wet	2.04		93.2	59-134			
Perfluorooctanesulfonamide (FOSA)	1.83	0.38	µg/kg wet	2.12		86.2	67-137			
Perfluorononanesulfonic acid (PFNS)	2.08	0.38	µg/kg wet	2.03		102	69-125			
Perfluoro-1-hexanesulfonamide (FHxSA)	2.15	0.38	µg/kg wet	2.12		102	50-150			
Perfluoro-1-butanesulfonamide (FBSA)	2.05	0.38	µg/kg wet	2.12		96.8	50-150			
Perfluorohexanesulfonic acid (PFHxS)	1.81	0.38	µg/kg wet	1.93		93.9	67-130			
Perfluoro-4-oxapentanoic acid (PFMPA)	2.17	0.38	µg/kg wet	2.12		103	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	2.13	0.38	µg/kg wet	2.12		101	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.16	0.38	µg/kg wet	2.01		107	64-140			
Perfluoropetanesulfonic acid (PFPeS)	1.73	0.38	µg/kg wet	1.99		86.7	73-123			
Perfluoroundecanoic acid (PFUnA)	1.87	0.38	µg/kg wet	2.12		88.2	64-136			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.21	0.38	µg/kg wet	2.12		104	50-150			
Perfluoroheptanoic acid (PFHpA)	2.04	0.38	µg/kg wet	2.12		96.5	71-131			
Perfluorooctanoic acid (PFOA)	2.05	0.38	µg/kg wet	2.12		96.9	69-133			
Perfluorooctanesulfonic acid (PFOS)	1.89	0.38	µg/kg wet	1.96		96.5	68-136			
Perfluorononanoic acid (PFNA)	2.09	0.38	µg/kg wet	2.12		98.7	72-129			

QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B294465 - % Solids

Duplicate (B294465-DUP8)

Source: 21J1947-01

Prepared: 11/11/21 Analyzed: 11/12/21

% Solids	92.7		% Wt		92.2			0.567	5	
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Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).

ANALYST

STATION PDF Management Station
 JFC James F. Constantino
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 AP Alan Pienkowski

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
22MTN Basement 1 (21J1947-01)			Lab File ID: 21J1947-01.d			Analyzed: 11/10/21 19:57			
M8FOSA	494698.8	4.044517	393,192.00	4.044517	126	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	193950.8	2.636617	160,692.00	2.644867	121	50 - 150	-0.0082	+/-0.50	
M2PFTA	1913818	4.39465	1,595,192.00	4.39465	120	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	226056.1	3.866833	226,739.00	3.866833	100	50 - 150	0.0000	+/-0.50	
MPFBA	817441.4	1.116633	677,435.00	1.116633	121	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	286130	2.945967	230,491.00	2.954083	124	50 - 150	-0.0081	+/-0.50	
M6PFDA	1217472	3.859367	1,018,454.00	3.867333	120	50 - 150	-0.0080	+/-0.50	
M3PFBS	188134.2	2.011067	149,326.00	2.019367	126	50 - 150	-0.0083	+/-0.50	
M7PFUnA	1619684	4.009984	1,365,067.00	4.017967	119	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	131159.9	3.509617	118,861.00	3.509617	110	50 - 150	0.0000	+/-0.50	
M5PFPeA	808491.1	1.824517	668,163.00	1.8328	121	50 - 150	-0.0083	+/-0.50	
M5PFHxA	1114747	2.722683	913,090.00	2.730867	122	50 - 150	-0.0082	+/-0.50	
M3PFHxS	149091.7	3.28425	123,606.00	3.2923	121	50 - 150	-0.0080	+/-0.50	
M4PFHpA	1137277	3.251867	947,771.00	3.25995	120	50 - 150	-0.0081	+/-0.50	
M8PFOA	1159818	3.51815	1,002,525.00	3.526133	116	50 - 150	-0.0080	+/-0.50	
M8PFOS	159951.3	3.708283	132,723.00	3.708283	121	50 - 150	0.0000	+/-0.50	
M9PFNA	1111668	3.709283	902,256.00	3.709283	123	50 - 150	0.0000	+/-0.50	
MPFDoA	1652934	4.153117	1,387,824.00	4.153117	119	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	285982.5	4.01745	302,650.00	4.025434	94	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	315558.8	3.937867	280,463.00	3.945867	113	50 - 150	-0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
22MTN Basement 2 (21J1947-02)			Lab File ID: 21J1947-02.d			Analyzed: 11/10/21 20:04			
M8FOSA	320345.5	4.044517	393,192.00	4.044517	81	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	158096.7	2.636633	160,692.00	2.644867	98	50 - 150	-0.0082	+/-0.50	
M2PFTA	1770418	4.39465	1,595,192.00	4.39465	111	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	203683.9	3.866833	226,739.00	3.866833	90	50 - 150	0.0000	+/-0.50	
MPFBA	698043.6	1.116633	677,435.00	1.116633	103	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	266240.3	2.945967	230,491.00	2.954083	116	50 - 150	-0.0081	+/-0.50	
M6PFDA	1028029	3.859367	1,018,454.00	3.867333	101	50 - 150	-0.0080	+/-0.50	
M3PFBS	164486	2.011067	149,326.00	2.019367	110	50 - 150	-0.0083	+/-0.50	
M7PFUnA	1372327	4.009984	1,365,067.00	4.017967	101	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	108210.4	3.509617	118,861.00	3.509617	91	50 - 150	0.0000	+/-0.50	
M5PFPeA	696472.2	1.824517	668,163.00	1.8328	104	50 - 150	-0.0083	+/-0.50	
M5PFHxA	960727.8	2.722683	913,090.00	2.730867	105	50 - 150	-0.0082	+/-0.50	
M3PFHxS	132342.5	3.28425	123,606.00	3.2923	107	50 - 150	-0.0080	+/-0.50	
M4PFHpA	1009797	3.251867	947,771.00	3.25995	107	50 - 150	-0.0081	+/-0.50	
M8PFOA	1051293	3.51815	1,002,525.00	3.526133	105	50 - 150	-0.0080	+/-0.50	
M8PFOS	148381.8	3.708283	132,723.00	3.708283	112	50 - 150	0.0000	+/-0.50	
M9PFNA	1001546	3.709283	902,256.00	3.709283	111	50 - 150	0.0000	+/-0.50	
MPFDoA	1366642	4.153117	1,387,824.00	4.153117	98	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	257794.2	4.01745	302,650.00	4.025434	85	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	282679.9	3.937867	280,463.00	3.945867	101	50 - 150	-0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B294033-BLK1)			Lab File ID: B294033-BLK1.d			Analyzed: 11/10/21 19:14			
M8FOSA	429016.3	4.044517	393,192.00	4.044517	109	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	177817.3	2.636617	160,692.00	2.644867	111	50 - 150	-0.0082	+/-0.50	
M2PFTA	1578890	4.39465	1,595,192.00	4.39465	99	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	205446.4	3.866833	226,739.00	3.866833	91	50 - 150	0.0000	+/-0.50	
MPFBA	706423.2	1.116633	677,435.00	1.116633	104	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	265918.4	2.954083	230,491.00	2.954083	115	50 - 150	0.0000	+/-0.50	
M6PFDA	1102411	3.867333	1,018,454.00	3.867333	108	50 - 150	0.0000	+/-0.50	
M3PFBS	159121.3	2.019367	149,326.00	2.019367	107	50 - 150	0.0000	+/-0.50	
M7PFUnA	1385367	4.009984	1,365,067.00	4.017967	101	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	117891.1	3.509617	118,861.00	3.509617	99	50 - 150	0.0000	+/-0.50	
M5PFPeA	696645.8	1.824517	668,163.00	1.8328	104	50 - 150	-0.0083	+/-0.50	
M5PFHxA	974444.4	2.730867	913,090.00	2.730867	107	50 - 150	0.0000	+/-0.50	
M3PFHxS	130763.8	3.28425	123,606.00	3.2923	106	50 - 150	-0.0080	+/-0.50	
M4PFHpA	1002456	3.25995	947,771.00	3.25995	106	50 - 150	0.0000	+/-0.50	
M8PFOA	991618.7	3.526133	1,002,525.00	3.526133	99	50 - 150	0.0000	+/-0.50	
M8PFOS	149775.8	3.708283	132,723.00	3.708283	113	50 - 150	0.0000	+/-0.50	
M9PFNA	1028584	3.709283	902,256.00	3.709283	114	50 - 150	0.0000	+/-0.50	
MPFDoA	1414039	4.153117	1,387,824.00	4.153117	102	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	267962	4.01745	302,650.00	4.025434	89	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	271198.5	3.945867	280,463.00	3.945867	97	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B294033-BS1)			Lab File ID: B294033-BS1.d			Analyzed: 11/10/21 19:07			
M8FOSA	507811.9	4.044517	393,192.00	4.044517	129	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	201720	2.636633	160,692.00	2.644867	126	50 - 150	-0.0082	+/-0.50	
M2PFTA	1920522	4.394667	1,595,192.00	4.39465	120	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	228061	3.866833	226,739.00	3.866833	101	50 - 150	0.0000	+/-0.50	
MPFBA	819892.8	1.116633	677,435.00	1.116633	121	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	293902.4	2.954083	230,491.00	2.954083	128	50 - 150	0.0000	+/-0.50	
M6PFDA	1276603	3.867333	1,018,454.00	3.867333	125	50 - 150	0.0000	+/-0.50	
M3PFBS	195916.2	2.019367	149,326.00	2.019367	131	50 - 150	0.0000	+/-0.50	
M7PFUnA	1573698	4.009984	1,365,067.00	4.017967	115	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	137275.6	3.509617	118,861.00	3.509617	115	50 - 150	0.0000	+/-0.50	
M5PFPeA	812180	1.824517	668,163.00	1.8328	122	50 - 150	-0.0083	+/-0.50	
M5PFHxA	1130201	2.730867	913,090.00	2.730867	124	50 - 150	0.0000	+/-0.50	
M3PFHxS	156806.5	3.2923	123,606.00	3.2923	127	50 - 150	0.0000	+/-0.50	
M4PFHpA	1173305	3.25995	947,771.00	3.25995	124	50 - 150	0.0000	+/-0.50	
M8PFOA	1213635	3.526133	1,002,525.00	3.526133	121	50 - 150	0.0000	+/-0.50	
M8PFOS	177309.4	3.708283	132,723.00	3.708283	134	50 - 150	0.0000	+/-0.50	
M9PFNA	1134643	3.709283	902,256.00	3.709283	126	50 - 150	0.0000	+/-0.50	
MPFDoA	1728049	4.153117	1,387,824.00	4.153117	125	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	300634.3	4.01745	302,650.00	4.025434	99	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	318777.5	3.945867	280,463.00	3.945867	114	50 - 150	0.0000	+/-0.50	

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065227-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	450	0.862899	0.8489657		-10.1	30
Perfluorobutanesulfonic acid (PFBS)	A	444	405	0.9900012	0.9656811		-8.8	30
Perfluoropentanoic acid (PFPeA)	A	500	443	0.9353824	0.9067352		-11.3	30
Perfluorohexanoic acid (PFHxA)	A	500	436	0.86678	0.8404228		-12.7	30
11Cl-PF3OUdS (F53B Minor)	A	472	438	1.835659	1.72255		-7.3	30
9Cl-PF3ONS (F53B Major)	A	466	482	3.897292	4.025215		3.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	447	1.602632	1.605774		-5.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	352	2.979159	0.1023471		-29.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	504	0.7665044	0.8972762		5.1	30
Perfluorodecanoic acid (PFDA)	A	500	458	0.929213	0.9496842		-8.3	30
Perfluorododecanoic acid (PFDoA)	A	500	435	0.9361562	0.8696535		-13.1	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	431	3.93233	3.727938		-3.2	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	520	0.4568315	0.5108367		9.2	30
N-EtFOSAA	A	500	430	0.9836556	0.8555917		-13.9	30
N-MeFOSAA	A	500	457	1.027301	1.04289		-8.6	30
Perfluorotetradecanoic acid (PFTA)	A	500	453	0.8542676	0.868046		-9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	500	449	1.009812	1.021105		-10.2	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	457	1.061084	1.137973		-2.3	30
Perfluorodecanesulfonic acid (PFDS)	A	482	495	0.6287667	0.6661969		2.6	30
Perfluorooctanesulfonamide (FOSA)	A	500	476	0.8334166	0.8758551		-4.7	30
Perfluorononanesulfonic acid (PFNS)	A	481	479	0.319818	0.3223431		-0.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	478	0.3462983	0.3157572		-4.4	30
Perfluoro-1-butanesulfonamide (FBSA)	A	500	442	0.3044628	0.2916464		-11.5	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	468	0.9652933	1.058429		2.3	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	484	0.495495	0.4789839		-3.3	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	486	0.5879048	0.5703637		-2.8	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	435	1.004025	0.9984949		-8.6	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	392	0.9760894	0.9038583		-16.6	30
Perfluoroundecanoic acid (PFUnA)	A	500	444	0.8528971	0.8321599		-11.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	486	0.3237613	0.3176499		-2.9	30
Perfluoroheptanoic acid (PFHpA)	A	500	501	0.9139933	0.918039		0.1	30
Perfluorooctanoic acid (PFOA)	A	500	507	0.8653288	0.8815278		1.4	30
Perfluorooctanesulfonic acid (PFOS)	A	464	485	0.9382121	1.048587		4.6	30
Perfluorononanoic acid (PFNA)	A	500	478	0.938444	0.9234035		-4.3	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065227-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2280	0.862899	0.8618408		-8.7	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2140	0.9900012	1.018693		-3.8	30
Perfluoropentanoic acid (PFPeA)	A	2500	2310	0.9353824	0.9432757		-7.8	30
Perfluorohexanoic acid (PFHxA)	A	2500	2260	0.86678	0.8716131		-9.5	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2400	1.835659	1.907195		1.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2280	3.897292	3.837298		-2.3	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2310	1.602632	1.659407		-2.2	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2080	2.979159	24.38936		-16.8	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2640	0.7665044	0.927793		9.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2130	0.929213	0.8807296		-15.0	30
Perfluorododecanoic acid (PFDoA)	A	2500	2330	0.9361562	0.9308634		-7.0	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2210	3.93233	3.859621		-0.6	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2360	0.4568315	0.4644542		-0.8	30
N-EtFOSAA	A	2500	2130	0.9836556	0.8500816		-14.8	30
N-MeFOSAA	A	2500	2420	1.027301	1.106771		-3.1	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2500	0.8542676	0.9497799		-0.2	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2320	1.009812	1.048471		-7.1	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2340	0.6287667	0.630669		-2.8	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2400	1.061084	1.18086		2.5	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2180	0.8334166	0.7998474		-13.0	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2480	0.319818	0.3338849		3.2	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2700	0.3462983	0.3612544		7.9	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2380	0.3044628	0.3133032		-4.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2250	0.9652933	1.021989		-1.2	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2530	0.495495	0.5055786		1.4	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2520	0.5879048	0.5947084		0.7	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2710	1.004025	1.229334		14.0	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2140	0.9760894	0.9880106		-8.9	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2400	0.8528971	0.8972853		-4.2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2520	0.3237613	0.331833		0.9	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2390	0.9139933	0.8814377		-4.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2630	0.8653288	0.9226045		5.3	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2200	0.9382121	0.9489291		-5.3	30
Perfluorononanoic acid (PFNA)	A	2500	2410	0.938444	0.9321201		-3.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065227-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2280	0.862899	0.8627174		-8.6	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2120	0.9900012	1.009674		-4.7	30
Perfluoropentanoic acid (PFPeA)	A	2500	2300	0.9353824	0.9396125		-8.1	30
Perfluorohexanoic acid (PFHxA)	A	2500	2290	0.86678	0.8807092		-8.5	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2490	1.835659	1.980942		5.7	30
9Cl-PF3ONS (F53B Major)	A	2330	2360	3.897292	3.985572		1.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2300	1.602632	1.651563		-2.6	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2280	2.979159	26.79598		-8.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2580	0.7665044	0.9063477		7.3	30
Perfluorodecanoic acid (PFDA)	A	2500	2150	0.929213	0.8915286		-13.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2300	0.9361562	0.9185763		-8.2	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2230	3.93233	3.904836		0.5	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2530	0.4568315	0.4978434		6.4	30
N-EtFOSAA	A	2500	2330	0.9836556	0.930092		-6.9	30
N-MeFOSAA	A	2500	2490	1.027301	1.137612		-0.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2320	0.8542676	0.8827306		-7.3	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2240	1.009812	1.011825		-10.3	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2540	0.6287667	0.6851027		5.5	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2520	1.061084	1.239847		7.7	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2320	0.8334166	0.8529206		-7.2	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2590	0.319818	0.3485505		7.7	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2680	0.3462983	0.3586661		7.1	30
Perfluoro-1-butananesulfonamide (FBSA)	A	2500	2470	0.3044628	0.325184		-1.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2150	0.9652933	0.9774449		-5.5	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2560	0.495495	0.5097064		2.2	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2510	0.5879048	0.5927361		0.4	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2510	1.004025	1.139366		5.5	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2020	0.9760894	0.9342668		-13.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2370	0.8528971	0.8885365		-5.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2560	0.3237613	0.3372505		2.5	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2510	0.9139933	0.928189		0.6	30
Perfluorooctanoic acid (PFOA)	A	2500	2520	0.8653288	0.8813973		0.6	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2390	0.9382121	1.03376		3.1	30
Perfluorononanoic acid (PFNA)	A	2500	2470	0.938444	0.9576319		-1.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065227-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2300	0.862899	0.8686579		-8.0	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2150	0.9900012	1.024446		-3.3	30
Perfluoropentanoic acid (PFPeA)	A	2500	2290	0.9353824	0.9378871		-8.3	30
Perfluorohexanoic acid (PFHxA)	A	2500	2230	0.86678	0.8576055		-10.9	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2550	1.835659	2.029106		8.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2470	3.897292	4.164699		5.9	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2180	1.602632	1.56709		-7.6	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2430	2.979159	28.57861		-2.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2620	0.7665044	0.9229413		9.3	30
Perfluorodecanoic acid (PFDA)	A	2500	2040	0.929213	0.8449366		-18.4	30
Perfluorododecanoic acid (PFDoA)	A	2500	2430	0.9361562	0.9731098		-2.7	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2240	3.93233	3.910779		0.7	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2610	0.4568315	0.5133596		9.7	30
N-EtFOSAA	A	2500	2460	0.9836556	0.9846493		-1.4	30
N-MeFOSAA	A	2500	2230	1.027301	1.016687		-10.9	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2370	0.8542676	0.9031416		-5.1	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2410	1.009812	1.08576		-3.7	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2390	0.6287667	0.6439266		-0.8	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2380	1.061084	1.173226		1.8	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2290	0.8334166	0.8408944		-8.5	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2670	0.319818	0.3605046		11.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2670	0.3462983	0.357133		6.7	30
Perfluoro-1-butananesulfonamide (FBSA)	A	2500	2410	0.3044628	0.3177454		-3.6	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2270	0.9652933	1.029951		-0.4	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2540	0.495495	0.5056773		1.4	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2510	0.5879048	0.5923859		0.3	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2550	1.004025	1.154091		6.9	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2220	0.9760894	1.023935		-5.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2320	0.8528971	0.8700407		-7.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2580	0.3237613	0.3401819		3.4	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2500	0.9139933	0.9242896		0.2	30
Perfluorooctanoic acid (PFOA)	A	2500	2550	0.8653288	0.8934024		2.0	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2280	0.9382121	0.986571		-1.6	30
Perfluorononanoic acid (PFNA)	A	2500	2260	0.938444	0.8753864		-9.6	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SOP-466 PFAS in Soil</i>	
Perfluorobutanoic acid (PFBA)	NH-P
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluoropentanoic acid (PFPeA)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
11Cl-PF3OUdS (F53B Minor)	NH-P
9Cl-PF3ONS (F53B Major)	NH-P
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P
8:2 Fluorotelomersulfonic acid (8:2FTS A)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	NH-P
Perfluoroheptanesulfonic acid (PFHpS)	NH-P
N-EtFOSAA	NH-P
N-MeFOSAA	NH-P
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
4:2 Fluorotelomersulfonic acid (4:2FTS A)	NH-P
Perfluorodecanesulfonic acid (PFDS)	NH-P
Perfluorooctanesulfonamide (FOSA)	NH-P
Perfluorononanesulfonic acid (PFNS)	NH-P
Perfluoro-1-hexanesulfonamide (FHxSA)	NH-P
Perfluoro-1-butanefulfonamide (FBSA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
Perfluoro-4-oxapentanoic acid (PFMPA)	NH-P
Perfluoro-5-oxahexanoic acid (PFMBA)	NH-P
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P
Perfluoropetanesulfonic acid (PFPeS)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
 Address: Tighe & Bond
 120 Front Street, Worcester, MA 01610
 Phone: 508-754-2201
 Project Location: Princeton, MA
 Project Number: P-0534017
 Project Manager: Jeff Apps/Michael Scherer
 Invoice recipient: Tighe & Bond
 Sampled By: M Scherer

Pace Analytical Work Order #	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/ORAB	Matrix Code	Conc Code
1	22 MTN BASEMENT 1	10/29/21	1130	GRAB	DW	U
2	22 MTN BASEMENT 2	10/29/21	1200	LC	LC	U

Received by (signature)	Date/Time
<i>[Signature]</i>	10/29/21 1200
<i>[Signature]</i>	10/29/21 18:20
<i>[Signature]</i>	10/29/21 20:35
<i>[Signature]</i>	10/29/21 20:35

Received by (signature)	Date/Time
<i>[Signature]</i>	10/29/21 1200
<i>[Signature]</i>	10/29/21 18:20
<i>[Signature]</i>	10/29/21 20:35
<i>[Signature]</i>	10/29/21 20:35

Comments:

7-Day	10-Day	Field Filtered	PFAS 10-Day (std)	Due Date:	1-Day	3-Day	Field Filtered	2-Day	4-Day	Lab to Filter
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ANALYSIS REQUESTED	Preservation Code	Container Use Only	Total Number Of:
			VIALS GLASS PLASTIC BACTERIA ENCORE
			Glassware in the fridge? Y / N
			Glassware in freezer? Y / N
			Prepackaged Cooler? Y / N
			*Pace Analytical is not responsible for missing samples from prepacked coolers
			1 Matrix Codes: GW = Ground Water WW = Waste Water DW = Drinking Water A = Air S = Soil SL = Sludge SOL = Solid O = Other (please define)
			2 Preservation Codes: J = Iced H = HCL M = Methanol N = Nitric Acid S = Sulfuric Acid B = Sodium Bisulfate X = Sodium Hydroxide T = Sodium Thiosulfate O = Other (please define)

Client Comments: *Please report the 14 components that*

Special Requirements: GW-1

RA RCP Required

RCP Certification Form Required

CT RCP Required

RCP Certification Form Required

MA State DW Required

PWSID #

Project Entity: Government Municipality WRTA Chromatogram
 Federal 21 J School MWRA MBTA ABTA AIHA-LAP, LLC

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T & B

Received By MA Date 10/29/11 Time 2035

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp -3.0
 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? MA Were Samples Tampered with? MA
 Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all Client T Analysis T Sampler Name T
 pertinent Information? Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____

Is there enough Volume? T

Is there Headspace where applicable? MA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F

Do all samples have the proper pH? MA Acid _____ Base _____

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

November 12, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

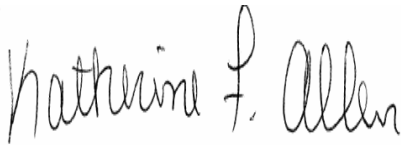
Project Location: Library, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1951

Enclosed are results of analyses for samples as received by the laboratory on October 29, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 11/12/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1951

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Library, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
Library 1	21J1951-01	Soil		SM 2540G SOP-466 PFAS	
Library 2	21J1951-02	Soil		SM 2540G SOP-466 PFAS	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Tod Kopycinski". The signature is written in a cursive, somewhat stylized script.

Tod E. Kopycinski
Laboratory Director

Project Location: Library, Princeton, MA

Sample Description:

Work Order: 21J1951

Date Received: 10/29/2021

Field Sample #: Library 1

Sampled: 10/29/2021 10:00

Sample ID: 21J1951-01

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.51	0.068	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.51	0.079	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.51	0.079	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.51	0.096	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.51	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
9Cl-PF3ONS (F53B Major)	ND	0.51	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.51	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.51	0.25	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.51	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluorodecanoic acid (PFDA)	ND	0.51	0.066	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.51	0.079	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.51	0.084	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.51	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
N-EtFOSAA	ND	0.51	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
N-MeFOSAA	ND	0.51	0.093	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.51	0.098	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.51	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.51	0.094	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.51	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.51	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.51	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.51	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.51	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.51	0.082	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.51	0.097	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.51	0.094	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.51	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.51	0.075	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.51	0.093	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.51	0.080	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.51	0.074	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluorooctanoic acid (PFOA)	ND	0.51	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluorooctanesulfonic acid (PFOS)	0.48	0.51	0.069	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH
Perfluorononanoic acid (PFNA)	ND	0.51	0.084	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:19	BLH

Project Location: Library, Princeton, MA

Sample Description:

Work Order: 21J1951

Date Received: 10/29/2021

Sampled: 10/29/2021 10:00

Field Sample #: Library 1

Sample ID: 21J1951-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	78.1		% Wt	1		SM 2540G	11/11/21	11/12/21 9:07	WT

Project Location: Library, Princeton, MA

Sample Description:

Work Order: 21J1951

Date Received: 10/29/2021

Field Sample #: Library 2

Sampled: 10/29/2021 10:20

Sample ID: 21J1951-02

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.24	0.50	0.067	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.50	0.077	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluoropentanoic acid (PFPeA)	0.14	0.50	0.077	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluorohexanoic acid (PFHxA)	0.17	0.50	0.094	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.50	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
9Cl-PF3ONS (F53B Major)	ND	0.50	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.50	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.50	0.24	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.50	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluorodecanoic acid (PFDA)	0.094	0.50	0.065	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.50	0.077	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.50	0.082	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.50	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
N-EtFOSAA	ND	0.50	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
N-MeFOSAA	ND	0.50	0.091	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.50	0.096	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.50	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.50	0.092	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.50	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.50	0.098	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.50	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.50	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.50	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluorohexanesulfonic acid (PFHxS)	1.2	0.50	0.080	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.50	0.095	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.50	0.092	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.50	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluoropentanesulfonic acid (PFPeS)	0.099	0.50	0.073	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.50	0.091	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.50	0.078	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluoroheptanoic acid (PFHpA)	0.18	0.50	0.072	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluorooctanoic acid (PFOA)	0.60	0.50	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluorooctanesulfonic acid (PFOS)	1.3	0.50	0.068	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH
Perfluorononanoic acid (PFNA)	0.22	0.50	0.082	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:26	BLH



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Library, Princeton, MA

Sample Description:

Work Order: 21J1951

Date Received: 10/29/2021

Sampled: 10/29/2021 10:20

Field Sample #: Library 2

Sample ID: 21J1951-02

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	75.8		% Wt	1		SM 2540G	11/11/21	11/12/21 9:07	WT

Sample Extraction Data

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
21J1951-01 [Library 1]	B294465	11/11/21
21J1951-02 [Library 2]	B294465	11/11/21

Prep Method: SOP 465-PFAAS-SOP-466 PFAS

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21J1951-01 [Library 1]	B294033	5.62	5.00	11/09/21
21J1951-02 [Library 2]	B294033	5.93	5.00	11/09/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B294033 - SOP 465-PFAAS

Blank (B294033-BLK1)

Prepared: 11/09/21 Analyzed: 11/10/21

Perfluorobutanoic acid (PFBA)	ND	0.39	µg/kg wet							
Perfluorobutanesulfonic acid (PFBS)	ND	0.39	µg/kg wet							
Perfluoropentanoic acid (PFPeA)	ND	0.39	µg/kg wet							
Perfluorohexanoic acid (PFHxA)	ND	0.39	µg/kg wet							
11Cl-PF3OUdS (F53B Minor)	ND	0.39	µg/kg wet							
9Cl-PF3ONS (F53B Major)	ND	0.39	µg/kg wet							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.39	µg/kg wet							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.39	µg/kg wet							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.39	µg/kg wet							
Perfluorodecanoic acid (PFDA)	ND	0.39	µg/kg wet							
Perfluorododecanoic acid (PFDoA)	ND	0.39	µg/kg wet							
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.39	µg/kg wet							
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.39	µg/kg wet							
N-EtFOSAA	ND	0.39	µg/kg wet							
N-MeFOSAA	ND	0.39	µg/kg wet							
Perfluorotetradecanoic acid (PFTA)	ND	0.39	µg/kg wet							
Perfluorotridecanoic acid (PFTrDA)	ND	0.39	µg/kg wet							
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.39	µg/kg wet							
Perfluorodecanesulfonic acid (PFDS)	ND	0.39	µg/kg wet							
Perfluorooctanesulfonamide (FOSA)	ND	0.39	µg/kg wet							
Perfluorononanesulfonic acid (PFNS)	ND	0.39	µg/kg wet							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.39	µg/kg wet							
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.39	µg/kg wet							
Perfluorohexanesulfonic acid (PFHxS)	ND	0.39	µg/kg wet							
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.39	µg/kg wet							
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.39	µg/kg wet							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.39	µg/kg wet							
Perfluoropentanesulfonic acid (PFPeS)	ND	0.39	µg/kg wet							
Perfluoroundecanoic acid (PFUnA)	ND	0.39	µg/kg wet							
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.39	µg/kg wet							
Perfluoroheptanoic acid (PFHpA)	ND	0.39	µg/kg wet							
Perfluorooctanoic acid (PFOA)	ND	0.39	µg/kg wet							
Perfluorooctanesulfonic acid (PFOS)	ND	0.39	µg/kg wet							
Perfluorononanoic acid (PFNA)	ND	0.39	µg/kg wet							

LCS (B294033-BS1)

Prepared: 11/09/21 Analyzed: 11/10/21

Perfluorobutanoic acid (PFBA)	1.89	0.38	µg/kg wet	2.12		89.1	71-135			
Perfluorobutanesulfonic acid (PFBS)	1.77	0.38	µg/kg wet	1.87		94.6	72-128			
Perfluoropentanoic acid (PFPeA)	1.91	0.38	µg/kg wet	2.12		90.2	69-132			
Perfluorohexanoic acid (PFHxA)	1.89	0.38	µg/kg wet	2.12		89.0	70-132			
11Cl-PF3OUdS (F53B Minor)	1.89	0.38	µg/kg wet	2.00		94.6	50-150			
9Cl-PF3ONS (F53B Major)	1.88	0.38	µg/kg wet	1.97		95.3	50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	1.94	0.38	µg/kg wet	2.00		97.4	50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	1.77	0.38	µg/kg wet	2.12		83.4	50-150			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	1.87	0.38	µg/kg wet	2.03		92.1	65-137			
Perfluorodecanoic acid (PFDA)	1.80	0.38	µg/kg wet	2.12		85.1	69-133			
Perfluorododecanoic acid (PFDoA)	1.82	0.38	µg/kg wet	2.12		85.8	69-135			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	1.90	0.38	µg/kg wet	1.89		101	50-150			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B294033 - SOP 465-PFAAS

LCS (B294033-BS1)

Prepared: 11/09/21 Analyzed: 11/10/21

Perfluoroheptanesulfonic acid (PFHpS)	1.97	0.38	µg/kg wet	2.03		97.1	70-132			
N-EtFOSAA	2.09	0.38	µg/kg wet	2.12		98.5	61-139			
N-MeFOSAA	2.13	0.38	µg/kg wet	2.12		100	63-144			
Perfluorotetradecanoic acid (PFTA)	1.91	0.38	µg/kg wet	2.12		90.1	69-133			
Perfluorotridecanoic acid (PFTTrDA)	2.00	0.38	µg/kg wet	2.12		94.4	66-139			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.03	0.38	µg/kg wet	1.98		102	62-145			
Perfluorodecanesulfonic acid (PFDS)	1.90	0.38	µg/kg wet	2.04		93.2	59-134			
Perfluorooctanesulfonamide (FOSA)	1.83	0.38	µg/kg wet	2.12		86.2	67-137			
Perfluorononanesulfonic acid (PFNS)	2.08	0.38	µg/kg wet	2.03		102	69-125			
Perfluoro-1-hexanesulfonamide (FHxSA)	2.15	0.38	µg/kg wet	2.12		102	50-150			
Perfluoro-1-butanefulfonamide (FBSA)	2.05	0.38	µg/kg wet	2.12		96.8	50-150			
Perfluorohexanesulfonic acid (PFHxS)	1.81	0.38	µg/kg wet	1.93		93.9	67-130			
Perfluoro-4-oxapentanoic acid (PFMPA)	2.17	0.38	µg/kg wet	2.12		103	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	2.13	0.38	µg/kg wet	2.12		101	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.16	0.38	µg/kg wet	2.01		107	64-140			
Perfluoropentanesulfonic acid (PFPeS)	1.73	0.38	µg/kg wet	1.99		86.7	73-123			
Perfluoroundecanoic acid (PFUnA)	1.87	0.38	µg/kg wet	2.12		88.2	64-136			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.21	0.38	µg/kg wet	2.12		104	50-150			
Perfluoroheptanoic acid (PFHpA)	2.04	0.38	µg/kg wet	2.12		96.5	71-131			
Perfluorooctanoic acid (PFOA)	2.05	0.38	µg/kg wet	2.12		96.9	69-133			
Perfluorooctanesulfonic acid (PFOS)	1.89	0.38	µg/kg wet	1.96		96.5	68-136			
Perfluorononanoic acid (PFNA)	2.09	0.38	µg/kg wet	2.12		98.7	72-129			

Matrix Spike (B294033-MS1)

Source: 21J1951-01

Prepared: 11/09/21 Analyzed: 11/10/21

Perfluorobutanoic acid (PFBA)	2.39	0.49	µg/kg dry	2.70	ND	88.7	71-135			
Perfluorobutanesulfonic acid (PFBS)	2.16	0.49	µg/kg dry	2.38	ND	90.5	72-128			
Perfluoropentanoic acid (PFPeA)	2.41	0.49	µg/kg dry	2.70	ND	89.2	69-132			
Perfluorohexanoic acid (PFHxA)	2.33	0.49	µg/kg dry	2.70	ND	86.5	70-132			
11Cl-PF3OUdS (F53B Minor)	2.40	0.49	µg/kg dry	2.54	ND	94.5	50-150			
9Cl-PF3ONS (F53B Major)	2.31	0.49	µg/kg dry	2.51	ND	91.7	50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	2.38	0.49	µg/kg dry	2.54	ND	93.7	50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	2.25	0.49	µg/kg dry	2.70	ND	83.4	50-150			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	2.49	0.49	µg/kg dry	2.59	ND	96.2	65-137			
Perfluorodecanoic acid (PFDA)	2.62	0.49	µg/kg dry	2.70	ND	97.2	69-133			
Perfluorododecanoic acid (PFDoA)	2.35	0.49	µg/kg dry	2.70	ND	87.1	69-135			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	2.31	0.49	µg/kg dry	2.40	ND	96.2	50-150			
Perfluoroheptanesulfonic acid (PFHpS)	2.53	0.49	µg/kg dry	2.58	ND	98.1	70-132			
N-EtFOSAA	2.68	0.49	µg/kg dry	2.70	ND	99.3	61-139			
N-MeFOSAA	2.77	0.49	µg/kg dry	2.70	ND	103	63-144			
Perfluorotetradecanoic acid (PFTA)	2.19	0.49	µg/kg dry	2.70	ND	81.0	69-133			
Perfluorotridecanoic acid (PFTTrDA)	2.56	0.49	µg/kg dry	2.70	ND	94.9	66-139			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.51	0.49	µg/kg dry	2.53	ND	99.5	62-145			
Perfluorodecanesulfonic acid (PFDS)	2.48	0.49	µg/kg dry	2.60	ND	95.3	59-134			
Perfluorooctanesulfonamide (FOSA)	2.41	0.49	µg/kg dry	2.70	ND	89.2	67-137			
Perfluorononanesulfonic acid (PFNS)	2.58	0.49	µg/kg dry	2.59	ND	99.6	69-125			
Perfluoro-1-hexanesulfonamide (FHxSA)	2.71	0.49	µg/kg dry	2.70	ND	100	50-150			
Perfluoro-1-butanefulfonamide (FBSA)	2.64	0.49	µg/kg dry	2.70	ND	97.8	50-150			
Perfluorohexanesulfonic acid (PFHxS)	2.22	0.49	µg/kg dry	2.46	ND	90.5	67-130			
Perfluoro-4-oxapentanoic acid (PFMPA)	2.70	0.49	µg/kg dry	2.70	ND	100	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	2.51	0.49	µg/kg dry	2.70	ND	93.2	50-150			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B294033 - SOP 465-PFAAS										
Matrix Spike (B294033-MS1)										
		Source: 21J1951-01		Prepared: 11/09/21 Analyzed: 11/10/21						
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.53	0.49	µg/kg dry	2.56	ND	98.5	64-140			
Perfluoropetanesulfonic acid (PFPeS)	2.03	0.49	µg/kg dry	2.54	ND	80.1	73-123			
Perfluoroundecanoic acid (PFUnA)	2.62	0.49	µg/kg dry	2.70	ND	97.2	64-136			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.75	0.49	µg/kg dry	2.70	ND	102	50-150			
Perfluoroheptanoic acid (PFHpA)	2.62	0.49	µg/kg dry	2.70	ND	97.0	71-131			
Perfluorooctanoic acid (PFOA)	2.68	0.49	µg/kg dry	2.70	ND	99.3	69-133			
Perfluorooctanesulfonic acid (PFOS)	2.60	0.49	µg/kg dry	2.49	0.477	85.1	68-136			
Perfluorononanoic acid (PFNA)	2.67	0.49	µg/kg dry	2.70	0.0809	96.1	72-129			
Matrix Spike Dup (B294033-MSD1)										
		Source: 21J1951-01		Prepared: 11/09/21 Analyzed: 11/10/21						
Perfluorobutanoic acid (PFBA)	2.58	0.51	µg/kg dry	2.84	ND	90.8	71-135	7.61	30	
Perfluorobutanesulfonic acid (PFBS)	2.40	0.51	µg/kg dry	2.51	ND	95.6	72-128	10.7	30	
Perfluoropentanoic acid (PFPeA)	2.57	0.51	µg/kg dry	2.84	ND	90.2	69-132	6.37	30	
Perfluorohexanoic acid (PFHxA)	2.57	0.51	µg/kg dry	2.84	ND	90.4	70-132	9.70	30	
11Cl-PF3OUdS (F53B Minor)	2.52	0.51	µg/kg dry	2.68	ND	94.2	50-150	4.90	30	
9Cl-PF3ONS (F53B Major)	2.55	0.51	µg/kg dry	2.65	ND	96.4	50-150	10.2	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	2.51	0.51	µg/kg dry	2.68	ND	93.7	50-150	5.27	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	2.33	0.51	µg/kg dry	2.84	ND	81.8	50-150	3.34	30	
8:2 Fluorotelomersulfonic acid (8:2FTS A)	3.12	0.51	µg/kg dry	2.73	ND	114	65-137	22.4	30	
Perfluorodecanoic acid (PFDA)	2.76	0.51	µg/kg dry	2.84	ND	97.0	69-133	5.05	30	
Perfluorododecanoic acid (PFDoA)	2.51	0.51	µg/kg dry	2.84	ND	88.3	69-135	6.61	30	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	2.57	0.51	µg/kg dry	2.53	ND	101	50-150	10.6	30	
Perfluoroheptanesulfonic acid (PFHpS)	2.99	0.51	µg/kg dry	2.72	ND	110	70-132	16.5	30	
N-EtFOSAA	3.39	0.51	µg/kg dry	2.84	ND	119	61-139	23.4	30	
N-MeFOSAA	2.88	0.51	µg/kg dry	2.84	ND	101	63-144	3.73	30	
Perfluorotetradecanoic acid (PFTA)	2.63	0.51	µg/kg dry	2.84	ND	92.6	69-133	18.6	30	
Perfluorotridecanoic acid (PFTrDA)	2.93	0.51	µg/kg dry	2.84	ND	103	66-139	13.6	30	
4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.73	0.51	µg/kg dry	2.66	ND	103	62-145	8.31	30	
Perfluorodecanesulfonic acid (PFDS)	2.79	0.51	µg/kg dry	2.74	ND	102	59-134	11.8	30	
Perfluorooctanesulfonamide (FOSA)	2.55	0.51	µg/kg dry	2.84	ND	89.8	67-137	5.89	30	
Perfluoronanesulfonic acid (PFNS)	2.46	0.51	µg/kg dry	2.73	ND	90.1	69-125	4.77	30	
Perfluoro-1-hexanesulfonamide (FHxSA)	3.26	0.51	µg/kg dry	2.84	ND	115	50-150	18.6	30	
Perfluoro-1-butanesulfonamide (FBSA)	2.92	0.51	µg/kg dry	2.84	ND	103	50-150	10.2	30	
Perfluorohexanesulfonic acid (PFHxS)	2.48	0.51	µg/kg dry	2.59	ND	95.9	67-130	11.0	30	
Perfluoro-4-oxapentanoic acid (PFMPA)	2.96	0.51	µg/kg dry	2.84	ND	104	50-150	9.02	30	
Perfluoro-5-oxahexanoic acid (PFMBA)	2.81	0.51	µg/kg dry	2.84	ND	98.8	50-150	11.1	30	
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.67	0.51	µg/kg dry	2.70	ND	99.0	64-140	5.71	30	
Perfluoropetanesulfonic acid (PFPeS)	2.41	0.51	µg/kg dry	2.67	ND	90.0	73-123	16.9	30	
Perfluoroundecanoic acid (PFUnA)	2.54	0.51	µg/kg dry	2.84	ND	89.4	64-136	3.08	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	3.02	0.51	µg/kg dry	2.84	ND	106	50-150	9.07	30	
Perfluoroheptanoic acid (PFHpA)	2.77	0.51	µg/kg dry	2.84	ND	97.5	71-131	5.76	30	
Perfluorooctanoic acid (PFOA)	2.90	0.51	µg/kg dry	2.84	ND	102	69-133	7.84	30	
Perfluorooctanesulfonic acid (PFOS)	2.93	0.51	µg/kg dry	2.63	0.477	93.5	68-136	12.2	30	
Perfluorononanoic acid (PFNA)	2.79	0.51	µg/kg dry	2.84	ND	98.3	72-129	4.36	30	

QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B294465 - % Solids

Duplicate (B294465-DUP9)

Source: 21J1951-01

Prepared: 11/11/21 Analyzed: 11/12/21

% Solids	80.9		% Wt		78.1			3.48	5	
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Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m ³	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).

ANALYST

STATION PDF Management Station
 JFC James F. Constantino
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 AP Alan Pienkowski

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Library 1 (21J1951-01)									
			Lab File ID: 21J1951-01.d			Analyzed: 11/10/21 20:19			
M8FOSA	497270.2	4.044517	393,192.00	4.044517	126	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	179085.1	2.628217	160,692.00	2.636633	111	50 - 150	-0.0084	+/-0.50	
M2PFTA	2196192	4.386533	1,595,192.00	4.39465	138	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	224542.3	3.858883	226,739.00	3.866833	99	50 - 150	-0.0080	+/-0.50	
MPFBA	817412.6	1.116633	677,435.00	1.116633	121	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	287617.8	2.945967	230,491.00	2.945967	125	50 - 150	0.0000	+/-0.50	
M6PFDA	1207011	3.859367	1,018,454.00	3.859367	119	50 - 150	0.0000	+/-0.50	
M3PFBS	192756.5	2.011067	149,326.00	2.011067	129	50 - 150	0.0000	+/-0.50	
M7PFUnA	1589604	4.009984	1,365,067.00	4.009984	116	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	119356.8	3.509617	118,861.00	3.509617	100	50 - 150	0.0000	+/-0.50	
M5PFPeA	817081.9	1.824517	668,163.00	1.824517	122	50 - 150	0.0000	+/-0.50	
M5PFHxA	1120793	2.722683	913,090.00	2.722683	123	50 - 150	0.0000	+/-0.50	
M3PFHxS	153240.9	3.28425	123,606.00	3.28425	124	50 - 150	0.0000	+/-0.50	
M4PFHpA	1196395	3.251867	947,771.00	3.251867	126	50 - 150	0.0000	+/-0.50	
M8PFOA	1170076	3.51815	1,002,525.00	3.51815	117	50 - 150	0.0000	+/-0.50	
M8PFOS	173398.1	3.700067	132,723.00	3.708283	131	50 - 150	-0.0082	+/-0.50	
M9PFNA	1059690	3.7011	902,256.00	3.709283	117	50 - 150	-0.0082	+/-0.50	
MPFDoA	1632398	4.144834	1,387,824.00	4.153117	118	50 - 150	-0.0083	+/-0.50	
d5-NEtFOSAA	323590.6	4.01745	302,650.00	4.01745	107	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	330787.9	3.937867	280,463.00	3.937867	118	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Library 2 (21J1951-02)									
			Lab File ID: 21J1951-02.d			Analyzed: 11/10/21 20:26			
M8FOSA	487797.6	4.044517	393,192.00	4.044517	124	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	173780.9	2.6118	160,692.00	2.636633	108	50 - 150	-0.0248	+/-0.50	
M2PFTA	1974277	4.386533	1,595,192.00	4.39465	124	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	240689.9	3.858883	226,739.00	3.866833	106	50 - 150	-0.0080	+/-0.50	
MPFBA	817193.8	1.116633	677,435.00	1.116633	121	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	271679.8	2.929717	230,491.00	2.945967	118	50 - 150	-0.0162	+/-0.50	
M6PFDA	1194814	3.859367	1,018,454.00	3.859367	117	50 - 150	0.0000	+/-0.50	
M3PFBS	191466.8	2.002783	149,326.00	2.011067	128	50 - 150	-0.0083	+/-0.50	
M7PFUnA	1565560	4.001983	1,365,067.00	4.009984	115	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	130311.9	3.501317	118,861.00	3.509617	110	50 - 150	-0.0083	+/-0.50	
M5PFPeA	820387.6	1.816233	668,163.00	1.824517	123	50 - 150	-0.0083	+/-0.50	
M5PFHxA	1118863	2.706317	913,090.00	2.722683	123	50 - 150	-0.0164	+/-0.50	
M3PFHxS	146655.5	3.276217	123,606.00	3.28425	119	50 - 150	-0.0080	+/-0.50	
M4PFHpA	1175516	3.243783	947,771.00	3.251867	124	50 - 150	-0.0081	+/-0.50	
M8PFOA	1186454	3.51815	1,002,525.00	3.51815	118	50 - 150	0.0000	+/-0.50	
M8PFOS	169198	3.700067	132,723.00	3.708283	127	50 - 150	-0.0082	+/-0.50	
M9PFNA	1065630	3.7011	902,256.00	3.709283	118	50 - 150	-0.0082	+/-0.50	
MPFDoA	1666613	4.144834	1,387,824.00	4.153117	120	50 - 150	-0.0083	+/-0.50	
d5-NEtFOSAA	316185.9	4.00945	302,650.00	4.01745	104	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	339087.6	3.937867	280,463.00	3.937867	121	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B294033-BLK1)			Lab File ID: B294033-BLK1.d			Analyzed: 11/10/21 19:14			
M8FOSA	429016.3	4.044517	393,192.00	4.044517	109	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	177817.3	2.636617	160,692.00	2.644867	111	50 - 150	-0.0082	+/-0.50	
M2PFTA	1578890	4.39465	1,595,192.00	4.39465	99	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	205446.4	3.866833	226,739.00	3.866833	91	50 - 150	0.0000	+/-0.50	
MPFBA	706423.2	1.116633	677,435.00	1.116633	104	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	265918.4	2.954083	230,491.00	2.954083	115	50 - 150	0.0000	+/-0.50	
M6PFDA	1102411	3.867333	1,018,454.00	3.867333	108	50 - 150	0.0000	+/-0.50	
M3PFBS	159121.3	2.019367	149,326.00	2.019367	107	50 - 150	0.0000	+/-0.50	
M7PFUnA	1385367	4.009984	1,365,067.00	4.017967	101	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	117891.1	3.509617	118,861.00	3.509617	99	50 - 150	0.0000	+/-0.50	
M5PFPeA	696645.8	1.824517	668,163.00	1.8328	104	50 - 150	-0.0083	+/-0.50	
M5PFHxA	974444.4	2.730867	913,090.00	2.730867	107	50 - 150	0.0000	+/-0.50	
M3PFHxS	130763.8	3.28425	123,606.00	3.2923	106	50 - 150	-0.0080	+/-0.50	
M4PFHpA	1002456	3.25995	947,771.00	3.25995	106	50 - 150	0.0000	+/-0.50	
M8PFOA	991618.7	3.526133	1,002,525.00	3.526133	99	50 - 150	0.0000	+/-0.50	
M8PFOS	149775.8	3.708283	132,723.00	3.708283	113	50 - 150	0.0000	+/-0.50	
M9PFNA	1028584	3.709283	902,256.00	3.709283	114	50 - 150	0.0000	+/-0.50	
MPFDoA	1414039	4.153117	1,387,824.00	4.153117	102	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	267962	4.01745	302,650.00	4.025434	89	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	271198.5	3.945867	280,463.00	3.945867	97	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B294033-BS1) Lab File ID: B294033-BS1.d Analyzed: 11/10/21 19:07									
M8FOSA	507811.9	4.044517	393,192.00	4.044517	129	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	201720	2.636633	160,692.00	2.644867	126	50 - 150	-0.0082	+/-0.50	
M2PFTA	1920522	4.394667	1,595,192.00	4.39465	120	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	228061	3.866833	226,739.00	3.866833	101	50 - 150	0.0000	+/-0.50	
MPFBA	819892.8	1.116633	677,435.00	1.116633	121	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	293902.4	2.954083	230,491.00	2.954083	128	50 - 150	0.0000	+/-0.50	
M6PFDA	1276603	3.867333	1,018,454.00	3.867333	125	50 - 150	0.0000	+/-0.50	
M3PFBS	195916.2	2.019367	149,326.00	2.019367	131	50 - 150	0.0000	+/-0.50	
M7PFUnA	1573698	4.009984	1,365,067.00	4.017967	115	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	137275.6	3.509617	118,861.00	3.509617	115	50 - 150	0.0000	+/-0.50	
M5PFPeA	812180	1.824517	668,163.00	1.8328	122	50 - 150	-0.0083	+/-0.50	
M5PFHxA	1130201	2.730867	913,090.00	2.730867	124	50 - 150	0.0000	+/-0.50	
M3PFHxS	156806.5	3.2923	123,606.00	3.2923	127	50 - 150	0.0000	+/-0.50	
M4PFHpA	1173305	3.25995	947,771.00	3.25995	124	50 - 150	0.0000	+/-0.50	
M8PFOA	1213635	3.526133	1,002,525.00	3.526133	121	50 - 150	0.0000	+/-0.50	
M8PFOS	177309.4	3.708283	132,723.00	3.708283	134	50 - 150	0.0000	+/-0.50	
M9PFNA	1134643	3.709283	902,256.00	3.709283	126	50 - 150	0.0000	+/-0.50	
MPFDoA	1728049	4.153117	1,387,824.00	4.153117	125	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	300634.3	4.01745	302,650.00	4.025434	99	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	318777.5	3.945867	280,463.00	3.945867	114	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Matrix Spike (B294033-MS1)			Lab File ID: B294033-MS1.d			Analyzed: 11/10/21 19:21			
M8FOSA	477069	4.044517	393,192.00	4.044517	121	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	187772.3	2.636633	160,692.00	2.644867	117	50 - 150	-0.0082	+/-0.50	
M2PFTA	1803849	4.394667	1,595,192.00	4.39465	113	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	218009.4	3.866833	226,739.00	3.866833	96	50 - 150	0.0000	+/-0.50	
MPFBA	774405.8	1.12495	677,435.00	1.116633	114	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	265024.3	2.954083	230,491.00	2.954083	115	50 - 150	0.0000	+/-0.50	
M6PFDA	1126308	3.867333	1,018,454.00	3.867333	111	50 - 150	0.0000	+/-0.50	
M3PFBS	184615.2	2.019367	149,326.00	2.019367	124	50 - 150	0.0000	+/-0.50	
M7PFUnA	1512791	4.009984	1,365,067.00	4.017967	111	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	130285.8	3.509617	118,861.00	3.509617	110	50 - 150	0.0000	+/-0.50	
M5PFPeA	778792.6	1.8328	668,163.00	1.8328	117	50 - 150	0.0000	+/-0.50	
M5PFHxA	1064018	2.730867	913,090.00	2.730867	117	50 - 150	0.0000	+/-0.50	
M3PFHxS	153972.4	3.2923	123,606.00	3.2923	125	50 - 150	0.0000	+/-0.50	
M4PFHpA	1100934	3.25995	947,771.00	3.25995	116	50 - 150	0.0000	+/-0.50	
M8PFOA	1078937	3.526133	1,002,525.00	3.526133	108	50 - 150	0.0000	+/-0.50	
M8PFOS	169952.3	3.708283	132,723.00	3.708283	128	50 - 150	0.0000	+/-0.50	
M9PFNA	1090340	3.709283	902,256.00	3.709283	121	50 - 150	0.0000	+/-0.50	
MPFDoA	1568931	4.153117	1,387,824.00	4.153117	113	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	287678.3	4.01745	302,650.00	4.025434	95	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	282450.8	3.945867	280,463.00	3.945867	101	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Matrix Spike Dup (B294033-MSD1)									
			Lab File ID: B294033-MSD1.d			Analyzed: 11/10/21 19:28			
M8FOSA	476043.4	4.044517	393,192.00	4.044517	121	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	179308.5	2.636633	160,692.00	2.644867	112	50 - 150	-0.0082	+/-0.50	
M2PFTA	1659713	4.394667	1,595,192.00	4.39465	104	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	206159.8	3.866833	226,739.00	3.866833	91	50 - 150	0.0000	+/-0.50	
MPFBA	766450.5	1.12495	677,435.00	1.116633	113	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	272027.3	2.954083	230,491.00	2.954083	118	50 - 150	0.0000	+/-0.50	
M6PFDA	1120970	3.867333	1,018,454.00	3.867333	110	50 - 150	0.0000	+/-0.50	
M3PFBS	180132.6	2.019367	149,326.00	2.019367	121	50 - 150	0.0000	+/-0.50	
M7PFUnA	1526935	4.009984	1,365,067.00	4.017967	112	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	124800	3.509617	118,861.00	3.509617	105	50 - 150	0.0000	+/-0.50	
M5PFPeA	764717.6	1.824517	668,163.00	1.8328	114	50 - 150	-0.0083	+/-0.50	
M5PFHxA	1041289	2.730867	913,090.00	2.730867	114	50 - 150	0.0000	+/-0.50	
M3PFHxS	139235.5	3.28425	123,606.00	3.2923	113	50 - 150	-0.0080	+/-0.50	
M4PFHpA	1104220	3.25995	947,771.00	3.25995	117	50 - 150	0.0000	+/-0.50	
M8PFOA	1072358	3.526133	1,002,525.00	3.526133	107	50 - 150	0.0000	+/-0.50	
M8PFOS	166503.7	3.708283	132,723.00	3.708283	125	50 - 150	0.0000	+/-0.50	
M9PFNA	1098333	3.709283	902,256.00	3.709283	122	50 - 150	0.0000	+/-0.50	
MPFDoA	1527225	4.153117	1,387,824.00	4.153117	110	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	264038.1	4.01745	302,650.00	4.025434	87	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	290640.9	3.937867	280,463.00	3.945867	104	50 - 150	-0.0080	+/-0.50	

CONTINUING CALIBRATION CHECK

SOP-466 PFAS

S065227-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	450	0.862899	0.8489657		-10.1	30
Perfluorobutanesulfonic acid (PFBS)	A	444	405	0.9900012	0.9656811		-8.8	30
Perfluoropentanoic acid (PFPeA)	A	500	443	0.9353824	0.9067352		-11.3	30
Perfluorohexanoic acid (PFHxA)	A	500	436	0.86678	0.8404228		-12.7	30
11Cl-PF3OUdS (F53B Minor)	A	472	438	1.835659	1.72255		-7.3	30
9Cl-PF3ONS (F53B Major)	A	466	482	3.897292	4.025215		3.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	447	1.602632	1.605774		-5.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	352	2.979159	0.1023471		-29.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	504	0.7665044	0.8972762		5.1	30
Perfluorodecanoic acid (PFDA)	A	500	458	0.929213	0.9496842		-8.3	30
Perfluorododecanoic acid (PFDoA)	A	500	435	0.9361562	0.8696535		-13.1	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	431	3.93233	3.727938		-3.2	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	520	0.4568315	0.5108367		9.2	30
N-EtFOSAA	A	500	430	0.9836556	0.8555917		-13.9	30
N-MeFOSAA	A	500	457	1.027301	1.04289		-8.6	30
Perfluorotetradecanoic acid (PFTA)	A	500	453	0.8542676	0.868046		-9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	500	449	1.009812	1.021105		-10.2	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	457	1.061084	1.137973		-2.3	30
Perfluorodecanesulfonic acid (PFDS)	A	482	495	0.6287667	0.6661969		2.6	30
Perfluorooctanesulfonamide (FOSA)	A	500	476	0.8334166	0.8758551		-4.7	30
Perfluorononanesulfonic acid (PFNS)	A	481	479	0.319818	0.3223431		-0.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	478	0.3462983	0.3157572		-4.4	30
Perfluoro-1-butanefulfonamide (FBSA)	A	500	442	0.3044628	0.2916464		-11.5	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	468	0.9652933	1.058429		2.3	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	484	0.495495	0.4789839		-3.3	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	486	0.5879048	0.5703637		-2.8	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	435	1.004025	0.9984949		-8.6	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	392	0.9760894	0.9038583		-16.6	30
Perfluoroundecanoic acid (PFUnA)	A	500	444	0.8528971	0.8321599		-11.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	486	0.3237613	0.3176499		-2.9	30
Perfluoroheptanoic acid (PFHpA)	A	500	501	0.9139933	0.918039		0.1	30
Perfluorooctanoic acid (PFOA)	A	500	507	0.8653288	0.8815278		1.4	30
Perfluorooctanesulfonic acid (PFOS)	A	464	485	0.9382121	1.048587		4.6	30
Perfluorononanoic acid (PFNA)	A	500	478	0.938444	0.9234035		-4.3	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-466 PFAS

S065227-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2280	0.862899	0.8618408		-8.7	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2140	0.9900012	1.018693		-3.8	30
Perfluoropentanoic acid (PFPeA)	A	2500	2310	0.9353824	0.9432757		-7.8	30
Perfluorohexanoic acid (PFHxA)	A	2500	2260	0.86678	0.8716131		-9.5	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2400	1.835659	1.907195		1.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2280	3.897292	3.837298		-2.3	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2310	1.602632	1.659407		-2.2	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2080	2.979159	24.38936		-16.8	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2640	0.7665044	0.927793		9.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2130	0.929213	0.8807296		-15.0	30
Perfluorododecanoic acid (PFDoA)	A	2500	2330	0.9361562	0.9308634		-7.0	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2210	3.93233	3.859621		-0.6	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2360	0.4568315	0.4644542		-0.8	30
N-EtFOSAA	A	2500	2130	0.9836556	0.8500816		-14.8	30
N-MeFOSAA	A	2500	2420	1.027301	1.106771		-3.1	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2500	0.8542676	0.9497799		-0.2	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2320	1.009812	1.048471		-7.1	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2340	0.6287667	0.630669		-2.8	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2400	1.061084	1.18086		2.5	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2180	0.8334166	0.7998474		-13.0	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2480	0.319818	0.3338849		3.2	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2700	0.3462983	0.3612544		7.9	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2380	0.3044628	0.3133032		-4.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2250	0.9652933	1.021989		-1.2	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2530	0.495495	0.5055786		1.4	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2520	0.5879048	0.5947084		0.7	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2710	1.004025	1.229334		14.0	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2140	0.9760894	0.9880106		-8.9	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2400	0.8528971	0.8972853		-4.2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2520	0.3237613	0.331833		0.9	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2390	0.9139933	0.8814377		-4.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2630	0.8653288	0.9226045		5.3	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2200	0.9382121	0.9489291		-5.3	30
Perfluorononanoic acid (PFNA)	A	2500	2410	0.938444	0.9321201		-3.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065227-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2280	0.862899	0.8627174		-8.6	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2120	0.9900012	1.009674		-4.7	30
Perfluoropentanoic acid (PFPeA)	A	2500	2300	0.9353824	0.9396125		-8.1	30
Perfluorohexanoic acid (PFHxA)	A	2500	2290	0.86678	0.8807092		-8.5	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2490	1.835659	1.980942		5.7	30
9Cl-PF3ONS (F53B Major)	A	2330	2360	3.897292	3.985572		1.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2300	1.602632	1.651563		-2.6	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2280	2.979159	26.79598		-8.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2580	0.7665044	0.9063477		7.3	30
Perfluorodecanoic acid (PFDA)	A	2500	2150	0.929213	0.8915286		-13.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2300	0.9361562	0.9185763		-8.2	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2230	3.93233	3.904836		0.5	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2530	0.4568315	0.4978434		6.4	30
N-EtFOSAA	A	2500	2330	0.9836556	0.930092		-6.9	30
N-MeFOSAA	A	2500	2490	1.027301	1.137612		-0.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2320	0.8542676	0.8827306		-7.3	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2240	1.009812	1.011825		-10.3	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2540	0.6287667	0.6851027		5.5	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2520	1.061084	1.239847		7.7	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2320	0.8334166	0.8529206		-7.2	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2590	0.319818	0.3485505		7.7	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2680	0.3462983	0.3586661		7.1	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2470	0.3044628	0.325184		-1.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2150	0.9652933	0.9774449		-5.5	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2560	0.495495	0.5097064		2.2	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2510	0.5879048	0.5927361		0.4	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2510	1.004025	1.139366		5.5	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2020	0.9760894	0.9342668		-13.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2370	0.8528971	0.8885365		-5.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2560	0.3237613	0.3372505		2.5	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2510	0.9139933	0.928189		0.6	30
Perfluorooctanoic acid (PFOA)	A	2500	2520	0.8653288	0.8813973		0.6	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2390	0.9382121	1.03376		3.1	30
Perfluorononanoic acid (PFNA)	A	2500	2470	0.938444	0.9576319		-1.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065227-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2300	0.862899	0.8686579		-8.0	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2150	0.9900012	1.024446		-3.3	30
Perfluoropentanoic acid (PFPeA)	A	2500	2290	0.9353824	0.9378871		-8.3	30
Perfluorohexanoic acid (PFHxA)	A	2500	2230	0.86678	0.8576055		-10.9	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2550	1.835659	2.029106		8.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2470	3.897292	4.164699		5.9	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2180	1.602632	1.56709		-7.6	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2430	2.979159	28.57861		-2.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2620	0.7665044	0.9229413		9.3	30
Perfluorodecanoic acid (PFDA)	A	2500	2040	0.929213	0.8449366		-18.4	30
Perfluorododecanoic acid (PFDoA)	A	2500	2430	0.9361562	0.9731098		-2.7	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2240	3.93233	3.910779		0.7	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2610	0.4568315	0.5133596		9.7	30
N-EtFOSAA	A	2500	2460	0.9836556	0.9846493		-1.4	30
N-MeFOSAA	A	2500	2230	1.027301	1.016687		-10.9	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2370	0.8542676	0.9031416		-5.1	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2410	1.009812	1.08576		-3.7	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2390	0.6287667	0.6439266		-0.8	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2380	1.061084	1.173226		1.8	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2290	0.8334166	0.8408944		-8.5	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2670	0.319818	0.3605046		11.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2670	0.3462983	0.357133		6.7	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2410	0.3044628	0.3177454		-3.6	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2270	0.9652933	1.029951		-0.4	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2540	0.495495	0.5056773		1.4	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2510	0.5879048	0.5923859		0.3	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2550	1.004025	1.154091		6.9	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2220	0.9760894	1.023935		-5.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2320	0.8528971	0.8700407		-7.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2580	0.3237613	0.3401819		3.4	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2500	0.9139933	0.9242896		0.2	30
Perfluorooctanoic acid (PFOA)	A	2500	2550	0.8653288	0.8934024		2.0	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2280	0.9382121	0.986571		-1.6	30
Perfluorononanoic acid (PFNA)	A	2500	2260	0.938444	0.8753864		-9.6	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SOP-466 PFAS in Soil</i>	
Perfluorobutanoic acid (PFBA)	NH-P
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluoropentanoic acid (PFPeA)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
11Cl-PF3OUdS (F53B Minor)	NH-P
9Cl-PF3ONS (F53B Major)	NH-P
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P
8:2 Fluorotelomersulfonic acid (8:2FTS A)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	NH-P
Perfluoroheptanesulfonic acid (PFHpS)	NH-P
N-EtFOSAA	NH-P
N-MeFOSAA	NH-P
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
4:2 Fluorotelomersulfonic acid (4:2FTS A)	NH-P
Perfluorodecanesulfonic acid (PFDS)	NH-P
Perfluorooctanesulfonamide (FOSA)	NH-P
Perfluorononanesulfonic acid (PFNS)	NH-P
Perfluoro-1-hexanesulfonamide (FHxSA)	NH-P
Perfluoro-1-butanesulfonamide (FBSA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
Perfluoro-4-oxapentanoic acid (PFMPA)	NH-P
Perfluoro-5-oxahexanoic acid (PFMBA)	NH-P
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P
Perfluoropetanesulfonic acid (PFPeS)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
Tighe & Bond
120 Front Street, Worcester, MA 01610
Phone: 508-754-2201
Project Location: Princeton, MA
Project Number: P-0534017
Project Manager: Jeff Arps/Michael Scherer
Pace Analytical Quote Name/Number
Invoice Recipient: Tighe & Bond
Sampled By: M Scherer

7-Day PFAS 10-Day (std) 10-Day Field Filtered Lab to Filter
1-Day 3-Day 4-Day Field Filtered Lab to Filter
Format: PDF EXCEL
Other: SOXHLET
CLP Like Data Pkg Required: NON SOXHLET
Email To: mjscherer@tighebond.com
Fax To #:

Pace Analytical Work Order #	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc Code	VIALS	CLASS	PLASTIC	BACTERIA	ENCORE
1	LIBRARY-1	10/21/21	1020	GRAB	5	U					
2	LIBRARY-2	10/21/21	1020								

7-Day	10-Day (std)	10-Day	Field Filtered	Lab to Filter
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Relinquished by: (signature)
Received by: (signature)
Relinquished by: (signature)
Received by: (signature)
Relinquished by: (signature)
Received by: (signature)
Relinquished by: (signature)
Received by: (signature)

Client Comments: Please report the results
Date/Time: 10/21/21 12:00
Date/Time: 10/21/21 18:20
Date/Time: 10/29/21 20:35
Date/Time: 10/29/21 30
Date/Time: 10/29/21 20:35

MA RCP Required
MCP Certification Form Required
CT RCP Required
RCP Certification Form Required
MA State PWS Required

Project Entity
Government
Federal
City
Municipality
21 J
Brownfield
MWRA School MBTA
WRTA
Chromatogram
ALHA-LAP, LLC

Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

Preservation Codes:
1 = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

Preservation Code
Total Number Of:
VIALS
GLASS
BACTERIA
ENCORE
Glassware in the fridge? Y/N
Glassware in freezer? Y/N
Prepackaged Cooler? Y/N
Pace Analytical is not responsible for missing samples from prepacked coolers

ANALYSIS REQUESTED

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T & B
 Received By MA Date 10/29/11 Time 2035
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 3.0
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? MA Were Samples Tampered with? MA
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? MA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? MA Acid _____ Base _____

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

[Empty box for comments]

November 12, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

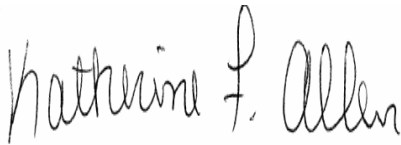
Project Location: 30 Mountain, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1952

Enclosed are results of analyses for samples as received by the laboratory on October 29, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 11/12/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1952

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 30 Mountain, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
30MTN Soilpile 1	21J1952-01	Soil		SM 2540G SOP-466 PFAS	
30MTN Soilpile 2	21J1952-02	Soil		SM 2540G SOP-466 PFAS	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Tod Kopycinski". The signature is written in a cursive, somewhat stylized script.

Tod E. Kopycinski
Laboratory Director

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1952

Date Received: 10/29/2021

Field Sample #: 30MTN Soilpile 1

Sampled: 10/29/2021 08:30

Sample ID: 21J1952-01

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.47	0.063	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.47	0.072	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.47	0.072	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.47	0.088	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.47	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
9Cl-PF3ONS (F53B Major)	ND	0.47	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.47	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.47	0.23	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.47	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluorodecanoic acid (PFDA)	ND	0.47	0.060	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.47	0.072	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.47	0.077	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.47	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
N-EtFOSAA	ND	0.47	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
N-MeFOSAA	ND	0.47	0.085	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.47	0.090	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.47	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.47	0.087	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.47	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.47	0.092	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.47	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.47	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.47	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.47	0.075	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.47	0.089	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.47	0.087	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.47	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.47	0.069	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.47	0.085	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.47	0.073	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.47	0.068	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluorooctanoic acid (PFOA)	ND	0.47	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluorooctanesulfonic acid (PFOS)	1.1	0.47	0.064	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH
Perfluorononanoic acid (PFNA)	ND	0.47	0.077	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:33	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1952

Date Received: 10/29/2021

Field Sample #: 30MTN Soilpile 1

Sampled: 10/29/2021 08:30

Sample ID: 21J1952-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	82.2		% Wt	1		SM 2540G	11/11/21	11/12/21 9:07	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1952

Date Received: 10/29/2021

Field Sample #: 30MTN Soilpile 2

Sampled: 10/29/2021 08:30

Sample ID: 21J1952-02

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.12	0.52	0.070	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.52	0.080	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluoropentanoic acid (PFPeA)	0.10	0.52	0.080	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.52	0.098	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.52	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
9Cl-PF3ONS (F53B Major)	ND	0.52	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.52	0.17	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.52	0.25	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.52	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluorodecanoic acid (PFDA)	0.17	0.52	0.068	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.52	0.080	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.52	0.086	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.52	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
N-EtFOSAA	ND	0.52	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
N-MeFOSAA	ND	0.52	0.095	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.52	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.52	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.52	0.097	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.52	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.52	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.52	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.52	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.52	0.17	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluorohexanesulfonic acid (PFHxS)	0.16	0.52	0.084	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.52	0.099	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.52	0.097	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.52	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.52	0.077	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.52	0.095	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.52	0.081	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.52	0.076	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluorooctanoic acid (PFOA)	0.46	0.52	0.15	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluorooctanesulfonic acid (PFOS)	5.7	0.52	0.071	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH
Perfluorononanoic acid (PFNA)	0.22	0.52	0.086	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:40	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1952

Date Received: 10/29/2021

Field Sample #: 30MTN Soilpile 2

Sampled: 10/29/2021 08:30

Sample ID: 21J1952-02

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	78.0		% Wt	1		SM 2540G	11/11/21	11/12/21 9:07	WT

Sample Extraction Data

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
21J1952-01 [30MTN Soilpile 1]	B294465	11/11/21
21J1952-02 [30MTN Soilpile 2]	B294465	11/11/21

Prep Method: SOP 465-PFAAS-SOP-466 PFAS

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21J1952-01 [30MTN Soilpile 1]	B294033	5.83	5.00	11/09/21
21J1952-02 [30MTN Soilpile 2]	B294033	5.51	5.00	11/09/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B294033 - SOP 465-PFAAS

Blank (B294033-BLK1)

Prepared: 11/09/21 Analyzed: 11/10/21

Perfluorobutanoic acid (PFBA)	ND	0.39	µg/kg wet							
Perfluorobutanesulfonic acid (PFBS)	ND	0.39	µg/kg wet							
Perfluoropentanoic acid (PFPeA)	ND	0.39	µg/kg wet							
Perfluorohexanoic acid (PFHxA)	ND	0.39	µg/kg wet							
11Cl-PF3OUdS (F53B Minor)	ND	0.39	µg/kg wet							
9Cl-PF3ONS (F53B Major)	ND	0.39	µg/kg wet							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.39	µg/kg wet							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.39	µg/kg wet							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.39	µg/kg wet							
Perfluorodecanoic acid (PFDA)	ND	0.39	µg/kg wet							
Perfluorododecanoic acid (PFDoA)	ND	0.39	µg/kg wet							
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.39	µg/kg wet							
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.39	µg/kg wet							
N-EtFOSAA	ND	0.39	µg/kg wet							
N-MeFOSAA	ND	0.39	µg/kg wet							
Perfluorotetradecanoic acid (PFTA)	ND	0.39	µg/kg wet							
Perfluorotridecanoic acid (PFTrDA)	ND	0.39	µg/kg wet							
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.39	µg/kg wet							
Perfluorodecanesulfonic acid (PFDS)	ND	0.39	µg/kg wet							
Perfluorooctanesulfonamide (FOSA)	ND	0.39	µg/kg wet							
Perfluorononanesulfonic acid (PFNS)	ND	0.39	µg/kg wet							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.39	µg/kg wet							
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.39	µg/kg wet							
Perfluorohexanesulfonic acid (PFHxS)	ND	0.39	µg/kg wet							
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.39	µg/kg wet							
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.39	µg/kg wet							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.39	µg/kg wet							
Perfluoropentanesulfonic acid (PFPeS)	ND	0.39	µg/kg wet							
Perfluoroundecanoic acid (PFUnA)	ND	0.39	µg/kg wet							
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.39	µg/kg wet							
Perfluoroheptanoic acid (PFHpA)	ND	0.39	µg/kg wet							
Perfluorooctanoic acid (PFOA)	ND	0.39	µg/kg wet							
Perfluorooctanesulfonic acid (PFOS)	ND	0.39	µg/kg wet							
Perfluorononanoic acid (PFNA)	ND	0.39	µg/kg wet							

LCS (B294033-BS1)

Prepared: 11/09/21 Analyzed: 11/10/21

Perfluorobutanoic acid (PFBA)	1.89	0.38	µg/kg wet	2.12		89.1	71-135			
Perfluorobutanesulfonic acid (PFBS)	1.77	0.38	µg/kg wet	1.87		94.6	72-128			
Perfluoropentanoic acid (PFPeA)	1.91	0.38	µg/kg wet	2.12		90.2	69-132			
Perfluorohexanoic acid (PFHxA)	1.89	0.38	µg/kg wet	2.12		89.0	70-132			
11Cl-PF3OUdS (F53B Minor)	1.89	0.38	µg/kg wet	2.00		94.6	50-150			
9Cl-PF3ONS (F53B Major)	1.88	0.38	µg/kg wet	1.97		95.3	50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	1.94	0.38	µg/kg wet	2.00		97.4	50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	1.77	0.38	µg/kg wet	2.12		83.4	50-150			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	1.87	0.38	µg/kg wet	2.03		92.1	65-137			
Perfluorodecanoic acid (PFDA)	1.80	0.38	µg/kg wet	2.12		85.1	69-133			
Perfluorododecanoic acid (PFDoA)	1.82	0.38	µg/kg wet	2.12		85.8	69-135			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	1.90	0.38	µg/kg wet	1.89		101	50-150			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B294033 - SOP 465-PFAAS										
LCS (B294033-BS1)										
					Prepared: 11/09/21 Analyzed: 11/10/21					
Perfluoroheptanesulfonic acid (PFHpS)	1.97	0.38	µg/kg wet	2.03		97.1	70-132			
N-EtFOSAA	2.09	0.38	µg/kg wet	2.12		98.5	61-139			
N-MeFOSAA	2.13	0.38	µg/kg wet	2.12		100	63-144			
Perfluorotetradecanoic acid (PFTA)	1.91	0.38	µg/kg wet	2.12		90.1	69-133			
Perfluorotridecanoic acid (PFTrDA)	2.00	0.38	µg/kg wet	2.12		94.4	66-139			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.03	0.38	µg/kg wet	1.98		102	62-145			
Perfluorodecanesulfonic acid (PFDS)	1.90	0.38	µg/kg wet	2.04		93.2	59-134			
Perfluorooctanesulfonamide (FOSA)	1.83	0.38	µg/kg wet	2.12		86.2	67-137			
Perfluorononanesulfonic acid (PFNS)	2.08	0.38	µg/kg wet	2.03		102	69-125			
Perfluoro-1-hexanesulfonamide (FHxSA)	2.15	0.38	µg/kg wet	2.12		102	50-150			
Perfluoro-1-butanesulfonamide (FBSA)	2.05	0.38	µg/kg wet	2.12		96.8	50-150			
Perfluorohexanesulfonic acid (PFHxS)	1.81	0.38	µg/kg wet	1.93		93.9	67-130			
Perfluoro-4-oxapentanoic acid (PFMPA)	2.17	0.38	µg/kg wet	2.12		103	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	2.13	0.38	µg/kg wet	2.12		101	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.16	0.38	µg/kg wet	2.01		107	64-140			
Perfluoropetanesulfonic acid (PFPeS)	1.73	0.38	µg/kg wet	1.99		86.7	73-123			
Perfluoroundecanoic acid (PFUnA)	1.87	0.38	µg/kg wet	2.12		88.2	64-136			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.21	0.38	µg/kg wet	2.12		104	50-150			
Perfluoroheptanoic acid (PFHpA)	2.04	0.38	µg/kg wet	2.12		96.5	71-131			
Perfluorooctanoic acid (PFOA)	2.05	0.38	µg/kg wet	2.12		96.9	69-133			
Perfluorooctanesulfonic acid (PFOS)	1.89	0.38	µg/kg wet	1.96		96.5	68-136			
Perfluorononanoic acid (PFNA)	2.09	0.38	µg/kg wet	2.12		98.7	72-129			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m ³	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).

ANALYST

STATION PDF Management Station
 JFC James F. Constantino
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 AP Alan Pienkowski

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN Soilpile 1 (21J1952-01)									
			Lab File ID: 21J1952-01.d			Analyzed: 11/10/21 20:33			
M8FOSA	492220.1	4.036517	393,192.00	4.044517	125	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	169906.7	2.603583	160,692.00	2.636633	106	50 - 150	-0.0330	+/-0.50	
M2PFTA	2102767	4.386533	1,595,192.00	4.39465	132	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	256383	3.858883	226,739.00	3.866833	113	50 - 150	-0.0080	+/-0.50	
MPFBA	846536.5	1.116633	677,435.00	1.116633	125	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	291930.9	2.929717	230,491.00	2.945967	127	50 - 150	-0.0162	+/-0.50	
M6PFDA	1275989	3.851417	1,018,454.00	3.859367	125	50 - 150	-0.0080	+/-0.50	
M3PFBS	191377.4	1.986217	149,326.00	2.011067	128	50 - 150	-0.0249	+/-0.50	
M7PFUnA	1717402	4.001983	1,365,067.00	4.009984	126	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	126432.4	3.501317	118,861.00	3.509617	106	50 - 150	-0.0083	+/-0.50	
M5PFPeA	844220.1	1.799667	668,163.00	1.824517	126	50 - 150	-0.0249	+/-0.50	
M5PFHxA	1122327	2.696967	913,090.00	2.722683	123	50 - 150	-0.0257	+/-0.50	
M3PFHxS	154139.1	3.276217	123,606.00	3.28425	125	50 - 150	-0.0080	+/-0.50	
M4PFHpA	1215328	3.243783	947,771.00	3.251867	128	50 - 150	-0.0081	+/-0.50	
M8PFOA	1183442	3.51015	1,002,525.00	3.51815	118	50 - 150	-0.0080	+/-0.50	
M8PFOS	168427.2	3.700067	132,723.00	3.708283	127	50 - 150	-0.0082	+/-0.50	
M9PFNA	1116291	3.7011	902,256.00	3.709283	124	50 - 150	-0.0082	+/-0.50	
MPFDoA	1769260	4.144834	1,387,824.00	4.153117	127	50 - 150	-0.0083	+/-0.50	
d5-NEtFOSAA	314835	4.00945	302,650.00	4.01745	104	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	365190.2	3.929883	280,463.00	3.937867	130	50 - 150	-0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN Soilpile 2 (21J1952-02)			Lab File ID: 21J1952-02.d		Analyzed: 11/10/21 20:40				
M8FOSA	473444.4	4.036533	393,192.00	4.044517	120	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	166415.1	2.6118	160,692.00	2.636633	104	50 - 150	-0.0248	+/-0.50	
M2PFTA	1991104	4.386533	1,595,192.00	4.39465	125	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	220874.8	3.858883	226,739.00	3.866833	97	50 - 150	-0.0080	+/-0.50	
MPFBA	793941.9	1.116633	677,435.00	1.116633	117	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	290151.7	2.929717	230,491.00	2.945967	126	50 - 150	-0.0162	+/-0.50	
M6PFDA	1267445	3.851417	1,018,454.00	3.859367	124	50 - 150	-0.0080	+/-0.50	
M3PFBS	184679.5	1.9945	149,326.00	2.011067	124	50 - 150	-0.0166	+/-0.50	
M7PFUnA	1572943	4.001983	1,365,067.00	4.009984	115	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	118541.3	3.501317	118,861.00	3.509617	100	50 - 150	-0.0083	+/-0.50	
M5PFPeA	790766.9	1.80795	668,163.00	1.824517	118	50 - 150	-0.0166	+/-0.50	
M5PFHxA	1059915	2.696967	913,090.00	2.722683	116	50 - 150	-0.0257	+/-0.50	
M3PFHxS	145755	3.276217	123,606.00	3.28425	118	50 - 150	-0.0080	+/-0.50	
M4PFHpA	1164629	3.243783	947,771.00	3.251867	123	50 - 150	-0.0081	+/-0.50	
M8PFOA	1108975	3.51015	1,002,525.00	3.51815	111	50 - 150	-0.0080	+/-0.50	
M8PFOS	153943	3.700067	132,723.00	3.708283	116	50 - 150	-0.0082	+/-0.50	
M9PFNA	1057718	3.7011	902,256.00	3.709283	117	50 - 150	-0.0082	+/-0.50	
MPFDoA	1643380	4.14485	1,387,824.00	4.153117	118	50 - 150	-0.0083	+/-0.50	
d5-NEtFOSAA	302891.1	4.00945	302,650.00	4.01745	100	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	344621.7	3.929883	280,463.00	3.937867	123	50 - 150	-0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B294033-BLK1)			Lab File ID: B294033-BLK1.d			Analyzed: 11/10/21 19:14			
M8FOSA	429016.3	4.044517	393,192.00	4.044517	109	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	177817.3	2.636617	160,692.00	2.644867	111	50 - 150	-0.0082	+/-0.50	
M2PFTA	1578890	4.39465	1,595,192.00	4.39465	99	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	205446.4	3.866833	226,739.00	3.866833	91	50 - 150	0.0000	+/-0.50	
MPFBA	706423.2	1.116633	677,435.00	1.116633	104	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	265918.4	2.954083	230,491.00	2.954083	115	50 - 150	0.0000	+/-0.50	
M6PFDA	1102411	3.867333	1,018,454.00	3.867333	108	50 - 150	0.0000	+/-0.50	
M3PFBS	159121.3	2.019367	149,326.00	2.019367	107	50 - 150	0.0000	+/-0.50	
M7PFUnA	1385367	4.009984	1,365,067.00	4.017967	101	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	117891.1	3.509617	118,861.00	3.509617	99	50 - 150	0.0000	+/-0.50	
M5PFPeA	696645.8	1.824517	668,163.00	1.8328	104	50 - 150	-0.0083	+/-0.50	
M5PFHxA	974444.4	2.730867	913,090.00	2.730867	107	50 - 150	0.0000	+/-0.50	
M3PFHxS	130763.8	3.28425	123,606.00	3.2923	106	50 - 150	-0.0080	+/-0.50	
M4PFHpA	1002456	3.25995	947,771.00	3.25995	106	50 - 150	0.0000	+/-0.50	
M8PFOA	991618.7	3.526133	1,002,525.00	3.526133	99	50 - 150	0.0000	+/-0.50	
M8PFOS	149775.8	3.708283	132,723.00	3.708283	113	50 - 150	0.0000	+/-0.50	
M9PFNA	1028584	3.709283	902,256.00	3.709283	114	50 - 150	0.0000	+/-0.50	
MPFDoA	1414039	4.153117	1,387,824.00	4.153117	102	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	267962	4.01745	302,650.00	4.025434	89	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	271198.5	3.945867	280,463.00	3.945867	97	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B294033-BS1)			Lab File ID: B294033-BS1.d			Analyzed: 11/10/21 19:07			
M8FOSA	507811.9	4.044517	393,192.00	4.044517	129	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	201720	2.636633	160,692.00	2.644867	126	50 - 150	-0.0082	+/-0.50	
M2PFTA	1920522	4.394667	1,595,192.00	4.39465	120	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	228061	3.866833	226,739.00	3.866833	101	50 - 150	0.0000	+/-0.50	
MPFBA	819892.8	1.116633	677,435.00	1.116633	121	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	293902.4	2.954083	230,491.00	2.954083	128	50 - 150	0.0000	+/-0.50	
M6PFDA	1276603	3.867333	1,018,454.00	3.867333	125	50 - 150	0.0000	+/-0.50	
M3PFBS	195916.2	2.019367	149,326.00	2.019367	131	50 - 150	0.0000	+/-0.50	
M7PFUnA	1573698	4.009984	1,365,067.00	4.017967	115	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	137275.6	3.509617	118,861.00	3.509617	115	50 - 150	0.0000	+/-0.50	
M5PFPeA	812180	1.824517	668,163.00	1.8328	122	50 - 150	-0.0083	+/-0.50	
M5PFHxA	1130201	2.730867	913,090.00	2.730867	124	50 - 150	0.0000	+/-0.50	
M3PFHxS	156806.5	3.2923	123,606.00	3.2923	127	50 - 150	0.0000	+/-0.50	
M4PFHpA	1173305	3.25995	947,771.00	3.25995	124	50 - 150	0.0000	+/-0.50	
M8PFOA	1213635	3.526133	1,002,525.00	3.526133	121	50 - 150	0.0000	+/-0.50	
M8PFOS	177309.4	3.708283	132,723.00	3.708283	134	50 - 150	0.0000	+/-0.50	
M9PFNA	1134643	3.709283	902,256.00	3.709283	126	50 - 150	0.0000	+/-0.50	
MPFDoA	1728049	4.153117	1,387,824.00	4.153117	125	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	300634.3	4.01745	302,650.00	4.025434	99	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	318777.5	3.945867	280,463.00	3.945867	114	50 - 150	0.0000	+/-0.50	

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065227-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	450	0.862899	0.8489657		-10.1	30
Perfluorobutanesulfonic acid (PFBS)	A	444	405	0.9900012	0.9656811		-8.8	30
Perfluoropentanoic acid (PFPeA)	A	500	443	0.9353824	0.9067352		-11.3	30
Perfluorohexanoic acid (PFHxA)	A	500	436	0.86678	0.8404228		-12.7	30
11Cl-PF3OUdS (F53B Minor)	A	472	438	1.835659	1.72255		-7.3	30
9Cl-PF3ONS (F53B Major)	A	466	482	3.897292	4.025215		3.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	447	1.602632	1.605774		-5.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	352	2.979159	0.1023471		-29.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	504	0.7665044	0.8972762		5.1	30
Perfluorodecanoic acid (PFDA)	A	500	458	0.929213	0.9496842		-8.3	30
Perfluorododecanoic acid (PFDoA)	A	500	435	0.9361562	0.8696535		-13.1	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	431	3.93233	3.727938		-3.2	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	520	0.4568315	0.5108367		9.2	30
N-EtFOSAA	A	500	430	0.9836556	0.8555917		-13.9	30
N-MeFOSAA	A	500	457	1.027301	1.04289		-8.6	30
Perfluorotetradecanoic acid (PFTA)	A	500	453	0.8542676	0.868046		-9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	500	449	1.009812	1.021105		-10.2	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	457	1.061084	1.137973		-2.3	30
Perfluorodecanesulfonic acid (PFDS)	A	482	495	0.6287667	0.6661969		2.6	30
Perfluorooctanesulfonamide (FOSA)	A	500	476	0.8334166	0.8758551		-4.7	30
Perfluorononanesulfonic acid (PFNS)	A	481	479	0.319818	0.3223431		-0.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	478	0.3462983	0.3157572		-4.4	30
Perfluoro-1-butanefulfonamide (FBSA)	A	500	442	0.3044628	0.2916464		-11.5	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	468	0.9652933	1.058429		2.3	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	484	0.495495	0.4789839		-3.3	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	486	0.5879048	0.5703637		-2.8	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	435	1.004025	0.9984949		-8.6	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	392	0.9760894	0.9038583		-16.6	30
Perfluoroundecanoic acid (PFUnA)	A	500	444	0.8528971	0.8321599		-11.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	486	0.3237613	0.3176499		-2.9	30
Perfluoroheptanoic acid (PFHpA)	A	500	501	0.9139933	0.918039		0.1	30
Perfluorooctanoic acid (PFOA)	A	500	507	0.8653288	0.8815278		1.4	30
Perfluorooctanesulfonic acid (PFOS)	A	464	485	0.9382121	1.048587		4.6	30
Perfluorononanoic acid (PFNA)	A	500	478	0.938444	0.9234035		-4.3	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065227-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2280	0.862899	0.8618408		-8.7	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2140	0.9900012	1.018693		-3.8	30
Perfluoropentanoic acid (PFPeA)	A	2500	2310	0.9353824	0.9432757		-7.8	30
Perfluorohexanoic acid (PFHxA)	A	2500	2260	0.86678	0.8716131		-9.5	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2400	1.835659	1.907195		1.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2280	3.897292	3.837298		-2.3	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2310	1.602632	1.659407		-2.2	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2080	2.979159	24.38936		-16.8	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2640	0.7665044	0.927793		9.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2130	0.929213	0.8807296		-15.0	30
Perfluorododecanoic acid (PFDoA)	A	2500	2330	0.9361562	0.9308634		-7.0	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2210	3.93233	3.859621		-0.6	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2360	0.4568315	0.4644542		-0.8	30
N-EtFOSAA	A	2500	2130	0.9836556	0.8500816		-14.8	30
N-MeFOSAA	A	2500	2420	1.027301	1.106771		-3.1	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2500	0.8542676	0.9497799		-0.2	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2320	1.009812	1.048471		-7.1	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2340	0.6287667	0.630669		-2.8	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2400	1.061084	1.18086		2.5	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2180	0.8334166	0.7998474		-13.0	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2480	0.319818	0.3338849		3.2	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2700	0.3462983	0.3612544		7.9	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2380	0.3044628	0.3133032		-4.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2250	0.9652933	1.021989		-1.2	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2530	0.495495	0.5055786		1.4	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2520	0.5879048	0.5947084		0.7	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2710	1.004025	1.229334		14.0	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2140	0.9760894	0.9880106		-8.9	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2400	0.8528971	0.8972853		-4.2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2520	0.3237613	0.331833		0.9	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2390	0.9139933	0.8814377		-4.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2630	0.8653288	0.9226045		5.3	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2200	0.9382121	0.9489291		-5.3	30
Perfluorononanoic acid (PFNA)	A	2500	2410	0.938444	0.9321201		-3.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-466 PFAS

S065227-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2280	0.862899	0.8627174		-8.6	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2120	0.9900012	1.009674		-4.7	30
Perfluoropentanoic acid (PFPeA)	A	2500	2300	0.9353824	0.9396125		-8.1	30
Perfluorohexanoic acid (PFHxA)	A	2500	2290	0.86678	0.8807092		-8.5	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2490	1.835659	1.980942		5.7	30
9Cl-PF3ONS (F53B Major)	A	2330	2360	3.897292	3.985572		1.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2300	1.602632	1.651563		-2.6	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2280	2.979159	26.79598		-8.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2580	0.7665044	0.9063477		7.3	30
Perfluorodecanoic acid (PFDA)	A	2500	2150	0.929213	0.8915286		-13.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2300	0.9361562	0.9185763		-8.2	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESE)	A	2220	2230	3.93233	3.904836		0.5	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2530	0.4568315	0.4978434		6.4	30
N-EtFOSAA	A	2500	2330	0.9836556	0.930092		-6.9	30
N-MeFOSAA	A	2500	2490	1.027301	1.137612		-0.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2320	0.8542676	0.8827306		-7.3	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2240	1.009812	1.011825		-10.3	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2540	0.6287667	0.6851027		5.5	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2520	1.061084	1.239847		7.7	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2320	0.8334166	0.8529206		-7.2	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2590	0.319818	0.3485505		7.7	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2680	0.3462983	0.3586661		7.1	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2470	0.3044628	0.325184		-1.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2150	0.9652933	0.9774449		-5.5	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2560	0.495495	0.5097064		2.2	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2510	0.5879048	0.5927361		0.4	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2510	1.004025	1.139366		5.5	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2020	0.9760894	0.9342668		-13.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2370	0.8528971	0.8885365		-5.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2560	0.3237613	0.3372505		2.5	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2510	0.9139933	0.928189		0.6	30
Perfluorooctanoic acid (PFOA)	A	2500	2520	0.8653288	0.8813973		0.6	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2390	0.9382121	1.03376		3.1	30
Perfluorononanoic acid (PFNA)	A	2500	2470	0.938444	0.9576319		-1.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065227-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2300	0.862899	0.8686579		-8.0	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2150	0.9900012	1.024446		-3.3	30
Perfluoropentanoic acid (PFPeA)	A	2500	2290	0.9353824	0.9378871		-8.3	30
Perfluorohexanoic acid (PFHxA)	A	2500	2230	0.86678	0.8576055		-10.9	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2550	1.835659	2.029106		8.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2470	3.897292	4.164699		5.9	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2180	1.602632	1.56709		-7.6	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2430	2.979159	28.57861		-2.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2620	0.7665044	0.9229413		9.3	30
Perfluorodecanoic acid (PFDA)	A	2500	2040	0.929213	0.8449366		-18.4	30
Perfluorododecanoic acid (PFDoA)	A	2500	2430	0.9361562	0.9731098		-2.7	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2240	3.93233	3.910779		0.7	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2610	0.4568315	0.5133596		9.7	30
N-EtFOSAA	A	2500	2460	0.9836556	0.9846493		-1.4	30
N-MeFOSAA	A	2500	2230	1.027301	1.016687		-10.9	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2370	0.8542676	0.9031416		-5.1	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2410	1.009812	1.08576		-3.7	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2390	0.6287667	0.6439266		-0.8	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2380	1.061084	1.173226		1.8	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2290	0.8334166	0.8408944		-8.5	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2670	0.319818	0.3605046		11.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2670	0.3462983	0.357133		6.7	30
Perfluoro-1-butananesulfonamide (FBSA)	A	2500	2410	0.3044628	0.3177454		-3.6	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2270	0.9652933	1.029951		-0.4	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2540	0.495495	0.5056773		1.4	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2510	0.5879048	0.5923859		0.3	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2550	1.004025	1.154091		6.9	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2220	0.9760894	1.023935		-5.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2320	0.8528971	0.8700407		-7.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2580	0.3237613	0.3401819		3.4	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2500	0.9139933	0.9242896		0.2	30
Perfluorooctanoic acid (PFOA)	A	2500	2550	0.8653288	0.8934024		2.0	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2280	0.9382121	0.986571		-1.6	30
Perfluorononanoic acid (PFNA)	A	2500	2260	0.938444	0.8753864		-9.6	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

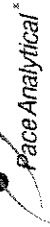
CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SOP-466 PFAS in Soil</i>	
Perfluorobutanoic acid (PFBA)	NH-P
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluoropentanoic acid (PFPeA)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
11Cl-PF3OUdS (F53B Minor)	NH-P
9Cl-PF3ONS (F53B Major)	NH-P
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P
8:2 Fluorotelomersulfonic acid (8:2FTS A)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	NH-P
Perfluoroheptanesulfonic acid (PFHpS)	NH-P
N-EtFOSAA	NH-P
N-MeFOSAA	NH-P
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
4:2 Fluorotelomersulfonic acid (4:2FTS A)	NH-P
Perfluorodecanesulfonic acid (PFDS)	NH-P
Perfluorooctanesulfonamide (FOSA)	NH-P
Perfluorononanesulfonic acid (PFNS)	NH-P
Perfluoro-1-hexanesulfonamide (FHxSA)	NH-P
Perfluoro-1-butanefulfonamide (FBSA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
Perfluoro-4-oxapentanoic acid (PFMPA)	NH-P
Perfluoro-5-oxahexanoic acid (PFMBA)	NH-P
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P
Perfluoropetanesulfonic acid (PFPeS)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022



Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
 Tighe & Bond
 120 Front Street, Worcester, MA 01610
 Phone: 508-754-2201
 Project Location: Princeton, MA
 Project Number: P-0534017
 Project Manager: Jeff Arps/Michael Scherer
 Pace Analytical Quote Name/Number
 Invoice Recipient:
 Sampled By: M Scherer

7-Day PFAS 10-Day (std) 10-Day Due Date:
 1-Day 3-Day 3-Day 4-Day 4-Day
 Format: PDF EXCEL
 Other: SOXHLET
 CLP Like Data Pkg Required:
 Email To: mjscherer@tighebond.com
 Fax To #:

ANALYSIS REQUESTED

Pace Analytical Work Order #	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc. Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	Preservation Code	Carrier Use Only
1	30 MTN Soil (P, L, E, Z)	10/29/21	0830	SOIL	S	U	1						
2	30 KTN Soil (P, L, E, Z)	10/29/21	0830	SOIL	S	U	1						

Client Comments: *Please report the LA component list*

Received by: (signature) *M. Scherer* Date/Time: 10/29/21 12:00
 Relinquished by: (signature) *A. Arps* Date/Time: 10/29/21 18:20
 Received by: (signature) *A. Arps* Date/Time: 10/29/21 20:35
 Relinquished by: (signature) *M. Scherer* Date/Time: 10/29/21 20:35

Received by: (signature) Date/Time:
 Relinquished by: (signature) Date/Time:
 Received by: (signature) Date/Time:
 Relinquished by: (signature) Date/Time:

Project Entity: Government Municipality WPTA Other
 Federal 21 J School Chromatogram
 City Brownfield MBTA AHA-LAP, LLC

MA MCP Required MA State Dby Required
 MCP Certification Form Required
 RCP Certification Form Required

Special Requirements: MELAC and AHA-LAP, LLC Accredited

1 Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

2 Preservation Codes:
 1 = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

Preservation Code: *ENCORE*

Total Number Of: *VIALS*

Glassware in the fridge? *Y/N*

Glassware in freezer? *Y/N*

Prepackaged Coolers? *Y/N*

*Pace Analytical is not responsible for missing samples from prepacked coolers

1 Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

2 Preservation Codes:
 1 = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
 H - High; M - Medium; L - Low; C - Clean; U - Unknown

Other: Chromatogram AHA-LAP, LLC

MA MCP Required MA State Dby Required
 MCP Certification Form Required
 RCP Certification Form Required

Special Requirements: MELAC and AHA-LAP, LLC Accredited

Project Entity: Government Municipality WPTA Other
 Federal 21 J School Chromatogram
 City Brownfield MBTA AHA-LAP, LLC

MA MCP Required MA State Dby Required
 MCP Certification Form Required
 RCP Certification Form Required

Special Requirements: MELAC and AHA-LAP, LLC Accredited

Client Comments: *Please report the LA component list*

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 Relinquished by: (signature) *A. Arps* Date/Time: 10/29/21 18:20
 Received by: (signature) *A. Arps* Date/Time: 10/29/21 20:35
 Relinquished by: (signature) *M. Scherer* Date/Time: 10/29/21 20:35

Project Entity: Government Municipality WPTA Other
 Federal 21 J School Chromatogram
 City Brownfield MBTA AHA-LAP, LLC

MA MCP Required MA State Dby Required
 MCP Certification Form Required
 RCP Certification Form Required

Special Requirements: MELAC and AHA-LAP, LLC Accredited

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T 13
 Received By MA Date 10/29/11 Time 2035
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 3.0
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? MA Were Samples Tampered with? MA
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? MA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? MA Acid _____ Base _____

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

November 12, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

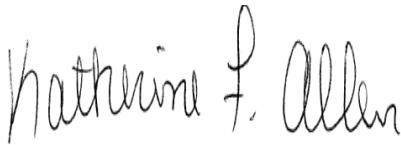
Project Location: Mountain Rd., Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1953

Enclosed are results of analyses for samples as received by the laboratory on October 29, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 11/12/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1953

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Mountain Rd., Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
Mountain Rd Runoff	21J1953-01	Soil		SM 2540G SOP-466 PFAS	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Tod Kopycinski". The signature is written in a cursive style with a large, sweeping initial "T".

Tod E. Kopycinski
Laboratory Director

Project Location: Mountain Rd., Princeton, MA

Sample Description:

Work Order: 21J1953

Date Received: 10/29/2021

Field Sample #: Mountain Rd Runoff

Sampled: 10/29/2021 09:40

Sample ID: 21J1953-01

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.74	0.099	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.74	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluoropentanoic acid (PFPeA)	0.15	0.74	0.11	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluorohexanoic acid (PFHxA)	0.17	0.74	0.14	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.74	0.21	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
9Cl-PF3ONS (F53B Major)	ND	0.74	0.19	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.74	0.24	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.74	0.36	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.74	0.19	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluorodecanoic acid (PFDA)	0.69	0.74	0.096	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluorododecanoic acid (PFDoA)	0.87	0.74	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.74	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluoroheptanesulfonic acid (PFHpS)	0.41	0.74	0.22	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
N-EtFOSAA	ND	0.74	0.21	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
N-MeFOSAA	0.22	0.74	0.14	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluorotetradecanoic acid (PFTA)	0.19	0.74	0.14	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluorotridecanoic acid (PFTTrDA)	0.17	0.74	0.17	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.74	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluorodecanesulfonic acid (PFDS)	1.4	0.74	0.17	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluorooctanesulfonamide (FOSA)	0.96	0.74	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluorononanesulfonic acid (PFNS)	0.97	0.74	0.20	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	2.0	0.74	0.22	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.74	0.24	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluorohexanesulfonic acid (PFHxS)	3.4	0.74	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.74	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.74	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.25	0.74	0.17	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluoropentanesulfonic acid (PFPeS)	0.12	0.74	0.11	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluoroundecanoic acid (PFUnA)	0.77	0.74	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.74	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.74	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluorooctanoic acid (PFOA)	0.92	0.74	0.21	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluorooctanesulfonic acid (PFOS)	76	0.74	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH
Perfluorononanoic acid (PFNA)	0.18	0.74	0.12	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:47	BLH

Project Location: Mountain Rd., Princeton, MA

Sample Description:

Work Order: 21J1953

Date Received: 10/29/2021

Field Sample #: Mountain Rd Runoff

Sampled: 10/29/2021 09:40

Sample ID: 21J1953-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	52.6		% Wt	1		SM 2540G	11/11/21	11/12/21 9:08	WT

Sample Extraction Data

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
21J1953-01 [Mountain Rd Runoff]	B294465	11/11/21

Prep Method: SOP 465-PFAAS-SOP-466 PFAS

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21J1953-01 [Mountain Rd Runoff]	B294033	5.76	5.00	11/09/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B294033 - SOP 465-PFAAS

Blank (B294033-BLK1)

Prepared: 11/09/21 Analyzed: 11/10/21

Perfluorobutanoic acid (PFBA)	ND	0.39	µg/kg wet							
Perfluorobutanesulfonic acid (PFBS)	ND	0.39	µg/kg wet							
Perfluoropentanoic acid (PFPeA)	ND	0.39	µg/kg wet							
Perfluorohexanoic acid (PFHxA)	ND	0.39	µg/kg wet							
11Cl-PF3OUdS (F53B Minor)	ND	0.39	µg/kg wet							
9Cl-PF3ONS (F53B Major)	ND	0.39	µg/kg wet							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.39	µg/kg wet							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.39	µg/kg wet							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.39	µg/kg wet							
Perfluorodecanoic acid (PFDA)	ND	0.39	µg/kg wet							
Perfluorododecanoic acid (PFDoA)	ND	0.39	µg/kg wet							
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.39	µg/kg wet							
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.39	µg/kg wet							
N-EtFOSAA	ND	0.39	µg/kg wet							
N-MeFOSAA	ND	0.39	µg/kg wet							
Perfluorotetradecanoic acid (PFTA)	ND	0.39	µg/kg wet							
Perfluorotridecanoic acid (PFTrDA)	ND	0.39	µg/kg wet							
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.39	µg/kg wet							
Perfluorodecanesulfonic acid (PFDS)	ND	0.39	µg/kg wet							
Perfluorooctanesulfonamide (FOSA)	ND	0.39	µg/kg wet							
Perfluorononanesulfonic acid (PFNS)	ND	0.39	µg/kg wet							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.39	µg/kg wet							
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.39	µg/kg wet							
Perfluorohexanesulfonic acid (PFHxS)	ND	0.39	µg/kg wet							
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.39	µg/kg wet							
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.39	µg/kg wet							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.39	µg/kg wet							
Perfluoropentanesulfonic acid (PFPeS)	ND	0.39	µg/kg wet							
Perfluoroundecanoic acid (PFUnA)	ND	0.39	µg/kg wet							
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.39	µg/kg wet							
Perfluoroheptanoic acid (PFHpA)	ND	0.39	µg/kg wet							
Perfluorooctanoic acid (PFOA)	ND	0.39	µg/kg wet							
Perfluorooctanesulfonic acid (PFOS)	ND	0.39	µg/kg wet							
Perfluorononanoic acid (PFNA)	ND	0.39	µg/kg wet							

LCS (B294033-BS1)

Prepared: 11/09/21 Analyzed: 11/10/21

Perfluorobutanoic acid (PFBA)	1.89	0.38	µg/kg wet	2.12		89.1	71-135			
Perfluorobutanesulfonic acid (PFBS)	1.77	0.38	µg/kg wet	1.87		94.6	72-128			
Perfluoropentanoic acid (PFPeA)	1.91	0.38	µg/kg wet	2.12		90.2	69-132			
Perfluorohexanoic acid (PFHxA)	1.89	0.38	µg/kg wet	2.12		89.0	70-132			
11Cl-PF3OUdS (F53B Minor)	1.89	0.38	µg/kg wet	2.00		94.6	50-150			
9Cl-PF3ONS (F53B Major)	1.88	0.38	µg/kg wet	1.97		95.3	50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	1.94	0.38	µg/kg wet	2.00		97.4	50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	1.77	0.38	µg/kg wet	2.12		83.4	50-150			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	1.87	0.38	µg/kg wet	2.03		92.1	65-137			
Perfluorodecanoic acid (PFDA)	1.80	0.38	µg/kg wet	2.12		85.1	69-133			
Perfluorododecanoic acid (PFDoA)	1.82	0.38	µg/kg wet	2.12		85.8	69-135			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	1.90	0.38	µg/kg wet	1.89		101	50-150			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B294033 - SOP 465-PFAAS										
LCS (B294033-BS1)										
					Prepared: 11/09/21 Analyzed: 11/10/21					
Perfluoroheptanesulfonic acid (PFHpS)	1.97	0.38	µg/kg wet	2.03		97.1	70-132			
N-EtFOSAA	2.09	0.38	µg/kg wet	2.12		98.5	61-139			
N-MeFOSAA	2.13	0.38	µg/kg wet	2.12		100	63-144			
Perfluorotetradecanoic acid (PFTA)	1.91	0.38	µg/kg wet	2.12		90.1	69-133			
Perfluorotridecanoic acid (PFTrDA)	2.00	0.38	µg/kg wet	2.12		94.4	66-139			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.03	0.38	µg/kg wet	1.98		102	62-145			
Perfluorodecanesulfonic acid (PFDS)	1.90	0.38	µg/kg wet	2.04		93.2	59-134			
Perfluorooctanesulfonamide (FOSA)	1.83	0.38	µg/kg wet	2.12		86.2	67-137			
Perfluorononanesulfonic acid (PFNS)	2.08	0.38	µg/kg wet	2.03		102	69-125			
Perfluoro-1-hexanesulfonamide (FHxSA)	2.15	0.38	µg/kg wet	2.12		102	50-150			
Perfluoro-1-butanefulfonamide (FBSA)	2.05	0.38	µg/kg wet	2.12		96.8	50-150			
Perfluorohexanesulfonic acid (PFHxS)	1.81	0.38	µg/kg wet	1.93		93.9	67-130			
Perfluoro-4-oxapentanoic acid (PFMPA)	2.17	0.38	µg/kg wet	2.12		103	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	2.13	0.38	µg/kg wet	2.12		101	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.16	0.38	µg/kg wet	2.01		107	64-140			
Perfluoropentanesulfonic acid (PFPeS)	1.73	0.38	µg/kg wet	1.99		86.7	73-123			
Perfluoroundecanoic acid (PFUnA)	1.87	0.38	µg/kg wet	2.12		88.2	64-136			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.21	0.38	µg/kg wet	2.12		104	50-150			
Perfluoroheptanoic acid (PFHpA)	2.04	0.38	µg/kg wet	2.12		96.5	71-131			
Perfluorooctanoic acid (PFOA)	2.05	0.38	µg/kg wet	2.12		96.9	69-133			
Perfluorooctanesulfonic acid (PFOS)	1.89	0.38	µg/kg wet	1.96		96.5	68-136			
Perfluorononanoic acid (PFNA)	2.09	0.38	µg/kg wet	2.12		98.7	72-129			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).

ANALYST

STATION PDF Management Station
 JFC James F. Constantino
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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Mountain Rd Runoff (21J1953-01)			Lab File ID: 21J1953-01.d			Analyzed: 11/10/21 20:47			
M8FOSA	439118.3	4.036517	393,192.00	4.044517	112	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	161904.2	2.603583	160,692.00	2.636633	101	50 - 150	-0.0330	+/-0.50	
M2PFTA	1699504	4.386533	1,595,192.00	4.39465	107	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	215825	3.858883	226,739.00	3.866833	95	50 - 150	-0.0080	+/-0.50	
MPFBA	757022.1	1.116633	677,435.00	1.116633	112	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	253620	2.929717	230,491.00	2.945967	110	50 - 150	-0.0162	+/-0.50	
M6PFDA	1174735	3.851417	1,018,454.00	3.859367	115	50 - 150	-0.0080	+/-0.50	
M3PFBS	173083.3	1.9945	149,326.00	2.011067	116	50 - 150	-0.0166	+/-0.50	
M7PFUnA	1495988	4.001983	1,365,067.00	4.009984	110	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	112251.3	3.501317	118,861.00	3.509617	94	50 - 150	-0.0083	+/-0.50	
M5PFPeA	747448.2	1.80795	668,163.00	1.824517	112	50 - 150	-0.0166	+/-0.50	
M5PFHxA	1009646	2.696967	913,090.00	2.722683	111	50 - 150	-0.0257	+/-0.50	
M3PFHxS	136719.6	3.276217	123,606.00	3.28425	111	50 - 150	-0.0080	+/-0.50	
M4PFHpA	1080962	3.243783	947,771.00	3.251867	114	50 - 150	-0.0081	+/-0.50	
M8PFOA	1110267	3.51015	1,002,525.00	3.51815	111	50 - 150	-0.0080	+/-0.50	
M8PFOS	146751.4	3.700067	132,723.00	3.708283	111	50 - 150	-0.0082	+/-0.50	
M9PFNA	984631.9	3.7011	902,256.00	3.709283	109	50 - 150	-0.0082	+/-0.50	
MPFDoA	1459539	4.144834	1,387,824.00	4.153117	105	50 - 150	-0.0083	+/-0.50	
d5-NEtFOSAA	276837.2	4.00945	302,650.00	4.01745	91	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	285379.9	3.929883	280,463.00	3.937867	102	50 - 150	-0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B294033-BLK1)			Lab File ID: B294033-BLK1.d			Analyzed: 11/10/21 19:14			
M8FOSA	429016.3	4.044517	393,192.00	4.044517	109	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	177817.3	2.636617	160,692.00	2.644867	111	50 - 150	-0.0082	+/-0.50	
M2PFTA	1578890	4.39465	1,595,192.00	4.39465	99	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	205446.4	3.866833	226,739.00	3.866833	91	50 - 150	0.0000	+/-0.50	
MPFBA	706423.2	1.116633	677,435.00	1.116633	104	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	265918.4	2.954083	230,491.00	2.954083	115	50 - 150	0.0000	+/-0.50	
M6PFDA	1102411	3.867333	1,018,454.00	3.867333	108	50 - 150	0.0000	+/-0.50	
M3PFBS	159121.3	2.019367	149,326.00	2.019367	107	50 - 150	0.0000	+/-0.50	
M7PFUnA	1385367	4.009984	1,365,067.00	4.017967	101	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	117891.1	3.509617	118,861.00	3.509617	99	50 - 150	0.0000	+/-0.50	
M5PFPeA	696645.8	1.824517	668,163.00	1.8328	104	50 - 150	-0.0083	+/-0.50	
M5PFHxA	974444.4	2.730867	913,090.00	2.730867	107	50 - 150	0.0000	+/-0.50	
M3PFHxS	130763.8	3.28425	123,606.00	3.2923	106	50 - 150	-0.0080	+/-0.50	
M4PFHpA	1002456	3.25995	947,771.00	3.25995	106	50 - 150	0.0000	+/-0.50	
M8PFOA	991618.7	3.526133	1,002,525.00	3.526133	99	50 - 150	0.0000	+/-0.50	
M8PFOS	149775.8	3.708283	132,723.00	3.708283	113	50 - 150	0.0000	+/-0.50	
M9PFNA	1028584	3.709283	902,256.00	3.709283	114	50 - 150	0.0000	+/-0.50	
MPFDoA	1414039	4.153117	1,387,824.00	4.153117	102	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	267962	4.01745	302,650.00	4.025434	89	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	271198.5	3.945867	280,463.00	3.945867	97	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B294033-BS1)			Lab File ID: B294033-BS1.d			Analyzed: 11/10/21 19:07			
M8FOSA	507811.9	4.044517	393,192.00	4.044517	129	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	201720	2.636633	160,692.00	2.644867	126	50 - 150	-0.0082	+/-0.50	
M2PFTA	1920522	4.394667	1,595,192.00	4.39465	120	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	228061	3.866833	226,739.00	3.866833	101	50 - 150	0.0000	+/-0.50	
MPFBA	819892.8	1.116633	677,435.00	1.116633	121	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	293902.4	2.954083	230,491.00	2.954083	128	50 - 150	0.0000	+/-0.50	
M6PFDA	1276603	3.867333	1,018,454.00	3.867333	125	50 - 150	0.0000	+/-0.50	
M3PFBS	195916.2	2.019367	149,326.00	2.019367	131	50 - 150	0.0000	+/-0.50	
M7PFUnA	1573698	4.009984	1,365,067.00	4.017967	115	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	137275.6	3.509617	118,861.00	3.509617	115	50 - 150	0.0000	+/-0.50	
M5PFPeA	812180	1.824517	668,163.00	1.8328	122	50 - 150	-0.0083	+/-0.50	
M5PFHxA	1130201	2.730867	913,090.00	2.730867	124	50 - 150	0.0000	+/-0.50	
M3PFHxS	156806.5	3.2923	123,606.00	3.2923	127	50 - 150	0.0000	+/-0.50	
M4PFHpA	1173305	3.25995	947,771.00	3.25995	124	50 - 150	0.0000	+/-0.50	
M8PFOA	1213635	3.526133	1,002,525.00	3.526133	121	50 - 150	0.0000	+/-0.50	
M8PFOS	177309.4	3.708283	132,723.00	3.708283	134	50 - 150	0.0000	+/-0.50	
M9PFNA	1134643	3.709283	902,256.00	3.709283	126	50 - 150	0.0000	+/-0.50	
MPFDoA	1728049	4.153117	1,387,824.00	4.153117	125	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	300634.3	4.01745	302,650.00	4.025434	99	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	318777.5	3.945867	280,463.00	3.945867	114	50 - 150	0.0000	+/-0.50	

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065227-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	450	0.862899	0.8489657		-10.1	30
Perfluorobutanesulfonic acid (PFBS)	A	444	405	0.9900012	0.9656811		-8.8	30
Perfluoropentanoic acid (PFPeA)	A	500	443	0.9353824	0.9067352		-11.3	30
Perfluorohexanoic acid (PFHxA)	A	500	436	0.86678	0.8404228		-12.7	30
11Cl-PF3OUdS (F53B Minor)	A	472	438	1.835659	1.72255		-7.3	30
9Cl-PF3ONS (F53B Major)	A	466	482	3.897292	4.025215		3.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	447	1.602632	1.605774		-5.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	352	2.979159	0.1023471		-29.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	504	0.7665044	0.8972762		5.1	30
Perfluorodecanoic acid (PFDA)	A	500	458	0.929213	0.9496842		-8.3	30
Perfluorododecanoic acid (PFDoA)	A	500	435	0.9361562	0.8696535		-13.1	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	431	3.93233	3.727938		-3.2	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	520	0.4568315	0.5108367		9.2	30
N-EtFOSAA	A	500	430	0.9836556	0.8555917		-13.9	30
N-MeFOSAA	A	500	457	1.027301	1.04289		-8.6	30
Perfluorotetradecanoic acid (PFTA)	A	500	453	0.8542676	0.868046		-9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	500	449	1.009812	1.021105		-10.2	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	457	1.061084	1.137973		-2.3	30
Perfluorodecanesulfonic acid (PFDS)	A	482	495	0.6287667	0.6661969		2.6	30
Perfluorooctanesulfonamide (FOSA)	A	500	476	0.8334166	0.8758551		-4.7	30
Perfluorononanesulfonic acid (PFNS)	A	481	479	0.319818	0.3223431		-0.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	478	0.3462983	0.3157572		-4.4	30
Perfluoro-1-butanefulfonamide (FBSA)	A	500	442	0.3044628	0.2916464		-11.5	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	468	0.9652933	1.058429		2.3	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	484	0.495495	0.4789839		-3.3	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	486	0.5879048	0.5703637		-2.8	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	435	1.004025	0.9984949		-8.6	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	392	0.9760894	0.9038583		-16.6	30
Perfluoroundecanoic acid (PFUnA)	A	500	444	0.8528971	0.8321599		-11.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	486	0.3237613	0.3176499		-2.9	30
Perfluoroheptanoic acid (PFHpA)	A	500	501	0.9139933	0.918039		0.1	30
Perfluorooctanoic acid (PFOA)	A	500	507	0.8653288	0.8815278		1.4	30
Perfluorooctanesulfonic acid (PFOS)	A	464	485	0.9382121	1.048587		4.6	30
Perfluorononanoic acid (PFNA)	A	500	478	0.938444	0.9234035		-4.3	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-466 PFAS

S065227-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2280	0.862899	0.8618408		-8.7	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2140	0.9900012	1.018693		-3.8	30
Perfluoropentanoic acid (PFPeA)	A	2500	2310	0.9353824	0.9432757		-7.8	30
Perfluorohexanoic acid (PFHxA)	A	2500	2260	0.86678	0.8716131		-9.5	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2400	1.835659	1.907195		1.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2280	3.897292	3.837298		-2.3	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2310	1.602632	1.659407		-2.2	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2080	2.979159	24.38936		-16.8	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2640	0.7665044	0.927793		9.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2130	0.929213	0.8807296		-15.0	30
Perfluorododecanoic acid (PFDoA)	A	2500	2330	0.9361562	0.9308634		-7.0	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2210	3.93233	3.859621		-0.6	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2360	0.4568315	0.4644542		-0.8	30
N-EtFOSAA	A	2500	2130	0.9836556	0.8500816		-14.8	30
N-MeFOSAA	A	2500	2420	1.027301	1.106771		-3.1	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2500	0.8542676	0.9497799		-0.2	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2320	1.009812	1.048471		-7.1	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2340	0.6287667	0.630669		-2.8	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2400	1.061084	1.18086		2.5	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2180	0.8334166	0.7998474		-13.0	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2480	0.319818	0.3338849		3.2	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2700	0.3462983	0.3612544		7.9	30
Perfluoro-1-butananesulfonamide (FBSA)	A	2500	2380	0.3044628	0.3133032		-4.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2250	0.9652933	1.021989		-1.2	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2530	0.495495	0.5055786		1.4	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2520	0.5879048	0.5947084		0.7	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2710	1.004025	1.229334		14.0	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2140	0.9760894	0.9880106		-8.9	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2400	0.8528971	0.8972853		-4.2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2520	0.3237613	0.331833		0.9	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2390	0.9139933	0.8814377		-4.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2630	0.8653288	0.9226045		5.3	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2200	0.9382121	0.9489291		-5.3	30
Perfluorononanoic acid (PFNA)	A	2500	2410	0.938444	0.9321201		-3.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065227-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2280	0.862899	0.8627174		-8.6	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2120	0.9900012	1.009674		-4.7	30
Perfluoropentanoic acid (PFPeA)	A	2500	2300	0.9353824	0.9396125		-8.1	30
Perfluorohexanoic acid (PFHxA)	A	2500	2290	0.86678	0.8807092		-8.5	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2490	1.835659	1.980942		5.7	30
9Cl-PF3ONS (F53B Major)	A	2330	2360	3.897292	3.985572		1.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2300	1.602632	1.651563		-2.6	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2280	2.979159	26.79598		-8.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2580	0.7665044	0.9063477		7.3	30
Perfluorodecanoic acid (PFDA)	A	2500	2150	0.929213	0.8915286		-13.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2300	0.9361562	0.9185763		-8.2	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2230	3.93233	3.904836		0.5	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2530	0.4568315	0.4978434		6.4	30
N-EtFOSAA	A	2500	2330	0.9836556	0.930092		-6.9	30
N-MeFOSAA	A	2500	2490	1.027301	1.137612		-0.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2320	0.8542676	0.8827306		-7.3	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2240	1.009812	1.011825		-10.3	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2540	0.6287667	0.6851027		5.5	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2520	1.061084	1.239847		7.7	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2320	0.8334166	0.8529206		-7.2	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2590	0.319818	0.3485505		7.7	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2680	0.3462983	0.3586661		7.1	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2470	0.3044628	0.325184		-1.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2150	0.9652933	0.9774449		-5.5	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2560	0.495495	0.5097064		2.2	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2510	0.5879048	0.5927361		0.4	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2510	1.004025	1.139366		5.5	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2020	0.9760894	0.9342668		-13.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2370	0.8528971	0.8885365		-5.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2560	0.3237613	0.3372505		2.5	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2510	0.9139933	0.928189		0.6	30
Perfluorooctanoic acid (PFOA)	A	2500	2520	0.8653288	0.8813973		0.6	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2390	0.9382121	1.03376		3.1	30
Perfluorononanoic acid (PFNA)	A	2500	2470	0.938444	0.9576319		-1.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-466 PFAS

S065227-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2300	0.862899	0.8686579		-8.0	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2150	0.9900012	1.024446		-3.3	30
Perfluoropentanoic acid (PFPeA)	A	2500	2290	0.9353824	0.9378871		-8.3	30
Perfluorohexanoic acid (PFHxA)	A	2500	2230	0.86678	0.8576055		-10.9	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2550	1.835659	2.029106		8.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2470	3.897292	4.164699		5.9	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2180	1.602632	1.56709		-7.6	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2430	2.979159	28.57861		-2.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2620	0.7665044	0.9229413		9.3	30
Perfluorodecanoic acid (PFDA)	A	2500	2040	0.929213	0.8449366		-18.4	30
Perfluorododecanoic acid (PFDoA)	A	2500	2430	0.9361562	0.9731098		-2.7	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2240	3.93233	3.910779		0.7	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2610	0.4568315	0.5133596		9.7	30
N-EtFOSAA	A	2500	2460	0.9836556	0.9846493		-1.4	30
N-MeFOSAA	A	2500	2230	1.027301	1.016687		-10.9	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2370	0.8542676	0.9031416		-5.1	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2410	1.009812	1.08576		-3.7	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2390	0.6287667	0.6439266		-0.8	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2380	1.061084	1.173226		1.8	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2290	0.8334166	0.8408944		-8.5	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2670	0.319818	0.3605046		11.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2670	0.3462983	0.357133		6.7	30
Perfluoro-1-butananesulfonamide (FBSA)	A	2500	2410	0.3044628	0.3177454		-3.6	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2270	0.9652933	1.029951		-0.4	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2540	0.495495	0.5056773		1.4	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2510	0.5879048	0.5923859		0.3	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2550	1.004025	1.154091		6.9	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2220	0.9760894	1.023935		-5.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2320	0.8528971	0.8700407		-7.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2580	0.3237613	0.3401819		3.4	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2500	0.9139933	0.9242896		0.2	30
Perfluorooctanoic acid (PFOA)	A	2500	2550	0.8653288	0.8934024		2.0	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2280	0.9382121	0.986571		-1.6	30
Perfluorononanoic acid (PFNA)	A	2500	2260	0.938444	0.8753864		-9.6	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SOP-466 PFAS in Soil</i>	
Perfluorobutanoic acid (PFBA)	NH-P
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluoropentanoic acid (PFPeA)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
11Cl-PF3OUdS (F53B Minor)	NH-P
9Cl-PF3ONS (F53B Major)	NH-P
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P
8:2 Fluorotelomersulfonic acid (8:2FTS A)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	NH-P
Perfluoroheptanesulfonic acid (PFHpS)	NH-P
N-EtFOSAA	NH-P
N-MeFOSAA	NH-P
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
4:2 Fluorotelomersulfonic acid (4:2FTS A)	NH-P
Perfluorodecanesulfonic acid (PFDS)	NH-P
Perfluorooctanesulfonamide (FOSA)	NH-P
Perfluorononanesulfonic acid (PFNS)	NH-P
Perfluoro-1-hexanesulfonamide (FHxSA)	NH-P
Perfluoro-1-butanefulfonamide (FBSA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
Perfluoro-4-oxapentanoic acid (PFMPA)	NH-P
Perfluoro-5-oxahexanoic acid (PFMBA)	NH-P
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P
Perfluoropetanesulfonic acid (PFPeS)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
 Tighe & Bond
 120 Front Street, Worcester, MA 01610
 Phone: 508 754-2201
 Princeton ~~MA~~ Sampling
 Princeton, MA
 P-0534017
 Project Manager: Jeff Arps/Michael Scherer
 Invoice Recipient: Tighe & Bond
 M Scherer
 Sampled By:

7-Day 10-Day Field Filtered
 PFAS 10-Day (std) Due Date:
 1-Day 3-Day Field Filtered
 2-Day 4-Day Lab to Filter
 Format: PDF EXCEL
 Other: **PCB ONLY**
 CLP Like Data Pkg Required: SOXHLET
 Email To: mischerer@tighebond.com NON SOXHLET
 Fax To #:

Pace Analytical Work Order #	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	CONP/GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	Preservation Code
	Mountain Road 2002F	10/29/21	09:40	GRAB	SW	U	2					
Relinquished by: (signature)		Date/Time: 10/29/21 11:00										
Received by: (signature)		Date/Time: 10/29/21 18:20										
Relinquished by: (signature)		Date/Time: 10/29/21 20:35										
Received by: (signature)		Date/Time: 10/29/21 20:35										
Relinquished by: (signature)		Date/Time:										
Received by: (signature)		Date/Time:										
Relinquished by: (signature)		Date/Time:										
Received by: (signature)		Date/Time:										

Client Comments: *Added to the compound list*

1 Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

2 Preservation Codes:
 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

3 Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

4 Preservation Codes:
 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

5 Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

6 Preservation Codes:
 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

Special Requirements

MA MCP Required GW-1
 MCP Certification Form Required
 CT RCP Required
 RCP Certification Form Required
 MA State by Required PWSID #

Project Entity

Government Municipality WRTA Other
 Federal Z1 J School Chromatogram
 City Brownfield MBTA ALPHA-LAP, LLC

ANALYSIS REQUESTED

Preservation Code
 Courier Use Only
 Total Number Of:
 VIALS _____
 GLASS _____
 PLASTIC _____
 BACTERIA _____
 ENCORE _____

Glassware in the fridge? Y/N
 Glassware in freezer? Y/N
 Prepackaged Cooler? Y/N

*Pace Analytical is not responsible for missing samples from prepacked coolers

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
 H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)
 Received by: (signature)
 Relinquished by: (signature)
 Received by: (signature)
 Relinquished by: (signature)
 Received by: (signature)
 Relinquished by: (signature)
 Received by: (signature)

Comments:

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T & B
 Received By MA Date 10/29/11 Time 2035
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 3.0
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? MA Were Samples Tamped with? MA
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? MA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? MA Acid _____ Base _____

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

[Empty box for comments]

November 16, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

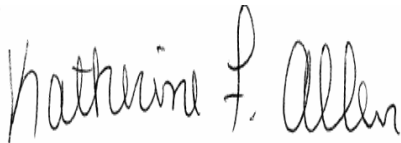
Project Location: 30 Mountain, Princeton, MA
Client Job Number:
Project Number: P-0534
Laboratory Work Order Number: 21J1956

Enclosed are results of analyses for samples as received by the laboratory on October 29, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 11/16/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1956

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 30 Mountain, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
30MTN S-2 (6-12)	21J1956-01	Soil		SM 2540G SOP-466 PFAS	
30MTN S-3 (6-12)	21J1956-02	Soil		SM 2540G SOP-466 PFAS	
30MTN S-3 (12-24)	21J1956-03	Soil		SM 2540G SOP-466 PFAS	
30MTN S-4 (6-12)	21J1956-04	Soil		SM 2540G SOP-466 PFAS	
30MTN S-5 (6-12)	21J1956-05	Soil		SM 2540G SOP-466 PFAS	
30MTN S-5 (12-24)	21J1956-06	Soil		SM 2540G SOP-466 PFAS	
30MTN S-7 (0-12)	21J1956-07	Soil		SM 2540G SOP-466 PFAS	
30MTN S-8 (0-12)	21J1956-08	Soil		SM 2540G SOP-466 PFAS	
30MTN S-9 (0-12)	21J1956-09	Soil		SM 2540G SOP-466 PFAS	
30MTN S-10 (0-12)	21J1956-10	Soil		SM 2540G SOP-466 PFAS	
30MTN S-11 (0-12)	21J1956-11	Soil		SM 2540G SOP-466 PFAS	
30MTN S-11 (24-36)	21J1956-12	Soil		SM 2540G SOP-466 PFAS	
30MTN S-12 (0-12)	21J1956-13	Soil		SM 2540G SOP-466 PFAS	
30MTN S-12 (12-24)	21J1956-14	Soil		SM 2540G SOP-466 PFAS	
30MTN S-13 (0-12)	21J1956-15	Soil		SM 2540G SOP-466 PFAS	
30MTN S-13 (12-24)	21J1956-16	Soil		SM 2540G SOP-466 PFAS	
30MTN S-14 (0-12)	21J1956-17	Soil		SM 2540G SOP-466 PFAS	
30MTN S-14 (12-24)	21J1956-18	Soil		SM 2540G SOP-466 PFAS	
30MTN S-15 (0-12)	21J1956-19	Soil		SM 2540G SOP-466 PFAS	
30MTN S-15 (12-24)	21J1956-20	Soil		SM 2540G SOP-466 PFAS	

Tighe & Bond, Inc. - Worcester
 120 Front St.
 Worcester, MA 01608-2303
 ATTN: Michael Scherer

REPORT DATE: 11/16/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1956

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 30 Mountain, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
30MTN S-16 (0-12)	21J1956-21	Soil		SM 2540G	
				SOP-466 PFAS	
Rinsate	21J1956-22	Water		SOP-454 PFAS	
Trip Blank	21J1956-23	Water		SOP-454 PFAS	
Field Blank	21J1956-24	Water		SOP-454 PFAS	
Equipment Blank	21J1956-25	Water		SOP-454 PFAS	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SOP-454 PFAS

Qualifications:

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

8:2 Fluorotelomersulfonic acid (8:2FTS A)
S065193-CCV5

SOP-466 PFAS

Qualifications:

Reported result is estimated. Value reported over verified calibration range.

Analyte & Samples(s) Qualified:

Perfluorooctanesulfonic acid (PFOS)
B294034-MS1, B294034-MSD1

Laboratory fortified blank/laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.

Analyte & Samples(s) Qualified:

Perfluorononanesulfonic acid (PFNS)
B294575-BS1

Matrix spike recovery and matrix spike duplicate recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogeneous sample aliquots cannot be eliminated.

Analyte & Samples(s) Qualified:

Perfluoroheptanesulfonic acid (PFHpS), Perfluorononanesulfonic acid (PFNS)
B294034-MS1, B294034-MSD1

Sample to spike ratio is greater than or equal to 4:1. Spiked amount is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.

Analyte & Samples(s) Qualified:

Perfluorooctanesulfonic acid (PFOS)
B294034-MS1, B294034-MSD1

Sample prepared and extracted at a dilution.

Analyte & Samples(s) Qualified:

21J1956-01RE1[30MTN S-2 (6-12)], 21J1956-04RE1[30MTN S-4 (6-12)], 21J1956-10RE1[30MTN S-10 (0-12)]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-2 (6-12)

Sampled: 10/28/2021 08:00

Sample ID: 21J1956-01

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.30	0.48	0.064	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Perfluorobutanesulfonic acid (PFBS)	0.092	0.48	0.073	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Perfluoropentanoic acid (PFPeA)	0.30	0.48	0.073	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Perfluorohexanoic acid (PFHxA)	0.63	0.48	0.089	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.48	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
9Cl-PF3ONS (F53B Major)	ND	0.48	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.48	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.48	0.23	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.48	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Perfluorodecanoic acid (PFDA)	ND	0.48	0.062	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.48	0.073	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.48	0.079	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Perfluoroheptanesulfonic acid (PFHpS)	1.1	0.48	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
N-EtFOSAA	ND	0.48	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
N-MeFOSAA	ND	0.48	0.087	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.48	0.091	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.48	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.48	0.088	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.48	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Perfluorooctanesulfonamide (FOSA)	0.14	0.48	0.093	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Perfluorononanesulfonic acid (PFNS)	1.1	0.48	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	1.4	0.48	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.48	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Perfluorohexanesulfonic acid (PFHxS)	4.8	0.48	0.076	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.48	0.090	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.48	0.088	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.48	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Perfluoropentanesulfonic acid (PFPeS)	0.13	0.48	0.070	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.48	0.087	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.48	0.074	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Perfluoroheptanoic acid (PFHpA)	0.15	0.48	0.069	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Perfluorooctanoic acid (PFOA)	0.72	0.48	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH
Perfluorooctanesulfonic acid (PFOS)	130	5.4	0.74	µg/kg dry	1		SOP-466 PFAS	11/13/21	11/15/21 19:27	BLH
Perfluorononanoic acid (PFNA)	ND	0.48	0.079	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:24	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-2 (6-12)

Sampled: 10/28/2021 08:00

Sample ID: 21J1956-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	81.1		% Wt	1		SM 2540G	11/11/21	11/12/21 9:08	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-3 (6-12)

Sampled: 10/28/2021 08:30

Sample ID: 21J1956-02

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.25	0.52	0.070	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.52	0.080	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluoropentanoic acid (PFPeA)	0.27	0.52	0.080	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluorohexanoic acid (PFHxA)	1.2	0.52	0.098	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.52	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
9Cl-PF3ONS (F53B Major)	ND	0.52	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.52	0.17	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.52	0.25	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.52	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluorodecanoic acid (PFDA)	ND	0.52	0.067	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.52	0.080	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.52	0.086	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluoroheptanesulfonic acid (PFHpS)	0.71	0.52	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
N-EtFOSAA	ND	0.52	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
N-MeFOSAA	ND	0.52	0.095	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.52	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.52	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.52	0.096	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.52	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.52	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.52	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	0.54	0.52	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluoro-1-butanefulfonamide (FBSA)	0.19	0.52	0.17	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluorohexanesulfonic acid (PFHxS)	5.5	0.52	0.084	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.52	0.099	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.52	0.096	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.52	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluoropentanesulfonic acid (PFPeS)	0.13	0.52	0.077	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.52	0.095	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.52	0.081	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluoroheptanoic acid (PFHpA)	0.52	0.52	0.076	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluorooctanoic acid (PFOA)	1.3	0.52	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluorooctanesulfonic acid (PFOS)	9.2	0.52	0.071	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH
Perfluorononanoic acid (PFNA)	ND	0.52	0.086	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:31	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-3 (6-12)

Sampled: 10/28/2021 08:30

Sample ID: 21J1956-02

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	76.7		% Wt	1		SM 2540G	11/11/21	11/12/21 9:08	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-3 (12-24)

Sampled: 10/28/2021 08:30

Sample ID: 21J1956-03

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.37	0.53	0.071	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluorobutanesulfonic acid (PFBS)	0.16	0.53	0.081	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluoropentanoic acid (PFPeA)	0.57	0.53	0.081	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluorohexanoic acid (PFHxA)	1.6	0.53	0.099	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.53	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
9Cl-PF3ONS (F53B Major)	ND	0.53	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.53	0.17	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.53	0.26	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.53	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluorodecanoic acid (PFDA)	ND	0.53	0.068	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.53	0.081	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.53	0.087	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluoroheptanesulfonic acid (PFHpS)	2.0	0.53	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
N-EtFOSAA	ND	0.53	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
N-MeFOSAA	ND	0.53	0.097	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.53	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.53	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.53	0.098	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.53	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.53	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.53	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	0.98	0.53	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluoro-1-butanesulfonamide (FBSA)	0.60	0.53	0.17	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluorohexanesulfonic acid (PFHxS)	9.5	0.53	0.085	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.53	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.53	0.098	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.53	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluoropentanesulfonic acid (PFPeS)	0.20	0.53	0.078	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.53	0.097	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.53	0.083	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluoroheptanoic acid (PFHpA)	0.56	0.53	0.077	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluorooctanoic acid (PFOA)	2.1	0.53	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluorooctanesulfonic acid (PFOS)	24	0.53	0.072	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH
Perfluorononanoic acid (PFNA)	0.11	0.53	0.087	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:38	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-3 (12-24)

Sampled: 10/28/2021 08:30

Sample ID: 21J1956-03

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	73.2		% Wt	1		SM 2540G	11/11/21	11/12/21 9:08	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-4 (6-12)

Sampled: 10/28/2021 09:00

Sample ID: 21J1956-04

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.22	0.60	0.080	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Perfluorobutanesulfonic acid (PFBS)	0.13	0.60	0.092	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Perfluoropentanoic acid (PFPeA)	0.22	0.60	0.092	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Perfluorohexanoic acid (PFHxA)	0.60	0.60	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.60	0.17	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
9Cl-PF3ONS (F53B Major)	ND	0.60	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.60	0.19	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.60	0.29	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.60	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Perfluorodecanoic acid (PFDA)	ND	0.60	0.077	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.60	0.092	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.60	0.098	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Perfluoroheptanesulfonic acid (PFHpS)	0.76	0.60	0.18	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
N-EtFOSAA	ND	0.60	0.17	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
N-MeFOSAA	ND	0.60	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.60	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.60	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.60	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.60	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.60	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Perfluorononanesulfonic acid (PFNS)	0.38	0.60	0.16	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	0.99	0.60	0.18	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.60	0.19	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Perfluorohexanesulfonic acid (PFHxS)	6.7	0.60	0.096	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.60	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.60	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.60	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Perfluoropentanesulfonic acid (PFPeS)	0.13	0.60	0.088	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.60	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.60	0.093	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Perfluoroheptanoic acid (PFHpA)	0.21	0.60	0.086	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Perfluorooctanoic acid (PFOA)	0.68	0.60	0.17	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH
Perfluorooctanesulfonic acid (PFOS)	72	6.7	0.90	µg/kg dry	1		SOP-466 PFAS	11/13/21	11/15/21 19:34	BLH
Perfluorononanoic acid (PFNA)	0.13	0.60	0.098	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:45	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-4 (6-12)

Sampled: 10/28/2021 09:00

Sample ID: 21J1956-04

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	65.4		% Wt	1		SM 2540G	11/11/21	11/12/21 9:08	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-5 (6-12)

Sampled: 10/28/2021 09:30

Sample ID: 21J1956-05

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.25	0.50	0.066	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.50	0.076	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluoropentanoic acid (PFPeA)	0.20	0.50	0.076	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluorohexanoic acid (PFHxA)	0.52	0.50	0.093	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.50	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
9Cl-PF3ONS (F53B Major)	ND	0.50	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.50	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.50	0.24	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.50	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluorodecanoic acid (PFDA)	ND	0.50	0.064	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.50	0.076	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.50	0.082	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluoroheptanesulfonic acid (PFHpS)	0.26	0.50	0.15	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
N-EtFOSAA	ND	0.50	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
N-MeFOSAA	ND	0.50	0.091	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.50	0.095	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.50	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.50	0.092	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.50	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.50	0.097	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.50	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.50	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.50	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluorohexanesulfonic acid (PFHxS)	1.0	0.50	0.080	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.50	0.094	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.50	0.092	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.50	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.50	0.073	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.50	0.091	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.50	0.077	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluoroheptanoic acid (PFHpA)	0.28	0.50	0.072	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluorooctanoic acid (PFOA)	0.85	0.50	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluorooctanesulfonic acid (PFOS)	11	0.50	0.067	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH
Perfluorononanoic acid (PFNA)	0.33	0.50	0.082	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 15:52	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-5 (6-12)

Sampled: 10/28/2021 09:30

Sample ID: 21J1956-05

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	78.4		% Wt	1		SM 2540G	11/11/21	11/12/21 9:09	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-5 (12-24)

Sampled: 10/28/2021 09:30

Sample ID: 21J1956-06

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.53	0.071	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluorobutanesulfonic acid (PFBS)	0.79	0.53	0.082	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.53	0.082	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluorohexanoic acid (PFHxA)	0.11	0.53	0.10	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.53	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
9Cl-PF3ONS (F53B Major)	ND	0.53	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.53	0.17	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.53	0.26	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.53	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluorodecanoic acid (PFDA)	ND	0.53	0.069	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.53	0.082	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.53	0.088	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.53	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
N-EtFOSAA	ND	0.53	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
N-MeFOSAA	ND	0.53	0.097	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.53	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.53	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.53	0.098	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.53	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.53	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.53	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.53	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.53	0.17	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluorohexanesulfonic acid (PFHxS)	1.8	0.53	0.085	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.53	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.53	0.098	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.53	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluoropentanesulfonic acid (PFPeS)	0.58	0.53	0.078	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.53	0.097	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.53	0.083	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluoroheptanoic acid (PFHpA)	0.085	0.53	0.077	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluorooctanoic acid (PFOA)	0.35	0.53	0.15	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluorooctanesulfonic acid (PFOS)	2.0	0.53	0.072	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH
Perfluorononanoic acid (PFNA)	ND	0.53	0.088	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:00	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-5 (12-24)

Sampled: 10/28/2021 09:30

Sample ID: 21J1956-06

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	71.9		% Wt	1		SM 2540G	11/11/21	11/12/21 9:09	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-7 (0-12)

Sampled: 10/28/2021 10:00

Sample ID: 21J1956-07

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.33	0.49	0.065	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.49	0.075	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluoropentanoic acid (PFPeA)	0.21	0.49	0.075	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluorohexanoic acid (PFHxA)	0.32	0.49	0.091	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.49	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
9Cl-PF3ONS (F53B Major)	ND	0.49	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.49	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.49	0.24	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.49	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluorodecanoic acid (PFDA)	ND	0.49	0.063	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.49	0.075	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.49	0.080	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.49	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
N-EtFOSAA	ND	0.49	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
N-MeFOSAA	ND	0.49	0.089	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.49	0.094	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.49	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.49	0.090	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.49	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.49	0.096	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.49	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.49	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.49	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluorohexanesulfonic acid (PFHxS)	1.2	0.49	0.078	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.49	0.092	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.49	0.090	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.49	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.49	0.072	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.49	0.089	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.49	0.076	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluoroheptanoic acid (PFHpA)	0.28	0.49	0.071	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluorooctanoic acid (PFOA)	0.92	0.49	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluorooctanesulfonic acid (PFOS)	2.8	0.49	0.066	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH
Perfluorononanoic acid (PFNA)	0.14	0.49	0.080	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:07	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-7 (0-12)

Sampled: 10/28/2021 10:00

Sample ID: 21J1956-07

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	80.8		% Wt	1		SM 2540G	11/11/21	11/12/21 9:09	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-8 (0-12)

Sampled: 10/28/2021 10:30

Sample ID: 21J1956-08

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.44	0.058	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.44	0.067	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.44	0.067	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.44	0.081	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.44	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
9Cl-PF3ONS (F53B Major)	ND	0.44	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.44	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.44	0.21	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.44	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluorodecanoic acid (PFDA)	ND	0.44	0.056	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.44	0.067	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.44	0.072	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.44	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
N-EtFOSAA	ND	0.44	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
N-MeFOSAA	ND	0.44	0.079	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.44	0.083	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.44	0.098	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.44	0.080	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.44	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.44	0.085	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.44	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	0.14	0.44	0.13	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.44	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluorohexanesulfonic acid (PFHxS)	0.80	0.44	0.070	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.44	0.082	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.44	0.080	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.44	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.44	0.064	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.44	0.079	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.44	0.068	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.44	0.063	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluorooctanoic acid (PFOA)	0.14	0.44	0.12	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluorooctanesulfonic acid (PFOS)	6.1	0.44	0.059	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH
Perfluorononanoic acid (PFNA)	ND	0.44	0.072	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:14	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-8 (0-12)

Sampled: 10/28/2021 10:30

Sample ID: 21J1956-08

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	87.8		% Wt	1		SM 2540G	11/11/21	11/12/21 9:09	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-9 (0-12)

Sampled: 10/28/2021 11:00

Sample ID: 21J1956-09

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.18	0.52	0.069	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluorobutanesulfonic acid (PFBS)	0.18	0.52	0.080	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluoropentanoic acid (PFPeA)	0.17	0.52	0.080	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluorohexanoic acid (PFHxA)	0.92	0.52	0.097	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.52	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
9Cl-PF3ONS (F53B Major)	ND	0.52	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.52	0.17	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.52	0.25	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.52	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluorodecanoic acid (PFDA)	ND	0.52	0.067	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.52	0.080	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.52	0.085	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluoroheptanesulfonic acid (PFHpS)	0.82	0.52	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
N-EtFOSAA	ND	0.52	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
N-MeFOSAA	ND	0.52	0.095	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.52	0.099	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.52	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.52	0.096	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.52	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.52	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluorononanesulfonic acid (PFNS)	0.14	0.52	0.14	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	0.90	0.52	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluoro-1-butanefulfonamide (FBSA)	0.20	0.52	0.17	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluorohexanesulfonic acid (PFHxS)	11	0.52	0.083	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.52	0.098	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.52	0.096	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.52	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluoropentanesulfonic acid (PFPeS)	0.24	0.52	0.076	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.52	0.095	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.52	0.081	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluoroheptanoic acid (PFHpA)	0.40	0.52	0.075	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluorooctanoic acid (PFOA)	0.93	0.52	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluorooctanesulfonic acid (PFOS)	26	0.52	0.070	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH
Perfluorononanoic acid (PFNA)	0.095	0.52	0.085	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:21	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-9 (0-12)

Sampled: 10/28/2021 11:00

Sample ID: 21J1956-09

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	73.5		% Wt	1		SM 2540G	11/11/21	11/12/21 9:10	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-10 (0-12)

Sampled: 10/28/2021 11:30

Sample ID: 21J1956-10

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.46	0.56	0.074	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Perfluorobutanesulfonic acid (PFBS)	0.12	0.56	0.085	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Perfluoropentanoic acid (PFPeA)	0.39	0.56	0.085	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Perfluorohexanoic acid (PFHxA)	0.94	0.56	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.56	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
9Cl-PF3ONS (F53B Major)	ND	0.56	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.56	0.18	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.56	0.27	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.56	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Perfluorodecanoic acid (PFDA)	ND	0.56	0.072	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.56	0.085	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.56	0.092	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Perfluoroheptanesulfonic acid (PFHpS)	1.9	0.56	0.17	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
N-EtFOSAA	ND	0.56	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
N-MeFOSAA	ND	0.56	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.56	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.56	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.56	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.56	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Perfluorooctanesulfonamide (FOSA)	0.20	0.56	0.11	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Perfluorononanesulfonic acid (PFNS)	1.3	0.56	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	2.0	0.56	0.17	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Perfluoro-1-butanefulfonamide (FBSA)	0.31	0.56	0.18	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Perfluorohexanesulfonic acid (PFHxS)	7.7	0.56	0.089	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.56	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.56	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.56	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Perfluoropentanesulfonic acid (PFPeS)	0.17	0.56	0.082	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.56	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.56	0.087	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Perfluoroheptanoic acid (PFHpA)	0.26	0.56	0.080	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Perfluorooctanoic acid (PFOA)	1.1	0.56	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH
Perfluorooctanesulfonic acid (PFOS)	110	6.3	0.85	µg/kg dry	1		SOP-466 PFAS	11/13/21	11/15/21 19:41	BLH
Perfluorononanoic acid (PFNA)	0.098	0.56	0.092	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:30	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-10 (0-12)

Sampled: 10/28/2021 11:30

Sample ID: 21J1956-10

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	68.7		% Wt	1		SM 2540G	11/11/21	11/12/21 9:10	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-11 (0-12)

Sampled: 10/28/2021 12:00

Sample ID: 21J1956-11

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.20	0.51	0.068	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.51	0.079	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluoropentanoic acid (PFPeA)	0.093	0.51	0.079	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.51	0.096	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.51	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
9Cl-PF3ONS (F53B Major)	ND	0.51	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.51	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.51	0.25	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.51	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluorodecanoic acid (PFDA)	ND	0.51	0.066	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.51	0.079	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.51	0.084	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.51	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
N-EtFOSAA	ND	0.51	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
N-MeFOSAA	ND	0.51	0.093	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.51	0.098	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.51	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.51	0.095	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.51	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.51	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.51	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.51	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.51	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.51	0.082	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.51	0.097	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.51	0.095	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.51	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.51	0.075	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.51	0.093	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.51	0.080	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluoroheptanoic acid (PFHpA)	0.099	0.51	0.074	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluorooctanoic acid (PFOA)	0.39	0.51	0.15	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluorooctanesulfonic acid (PFOS)	1.1	0.51	0.070	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH
Perfluorononanoic acid (PFNA)	0.22	0.51	0.084	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:45	BLH



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-11 (0-12)

Sampled: 10/28/2021 12:00

Sample ID: 21J1956-11

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	74.0		% Wt	1		SM 2540G	11/11/21	11/12/21 9:10	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-11 (24-36)

Sampled: 10/28/2021 12:00

Sample ID: 21J1956-12

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.41	0.055	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.41	0.063	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.41	0.063	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.41	0.076	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.41	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
9Cl-PF3ONS (F53B Major)	ND	0.41	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.41	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.41	0.20	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.41	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluorodecanoic acid (PFDA)	ND	0.41	0.053	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.41	0.063	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.41	0.067	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.41	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
N-EtFOSAA	ND	0.41	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
N-MeFOSAA	ND	0.41	0.074	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.41	0.078	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.41	0.092	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.41	0.075	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.41	0.095	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.41	0.080	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.41	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.41	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.41	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.41	0.065	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.41	0.077	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.41	0.075	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.14	0.41	0.094	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.41	0.060	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.41	0.074	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.41	0.064	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.41	0.059	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluorooctanoic acid (PFOA)	ND	0.41	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	0.41	0.055	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH
Perfluorononanoic acid (PFNA)	ND	0.41	0.067	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:52	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-11 (24-36)

Sampled: 10/28/2021 12:00

Sample ID: 21J1956-12

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	97.2		% Wt	1		SM 2540G	11/11/21	11/12/21 9:10	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-12 (0-12)

Sampled: 10/28/2021 12:30

Sample ID: 21J1956-13

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.52	0.069	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.52	0.080	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.52	0.080	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.52	0.097	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.52	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
9Cl-PF3ONS (F53B Major)	ND	0.52	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.52	0.17	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.52	0.25	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.52	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluorodecanoic acid (PFDA)	0.66	0.52	0.067	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluorododecanoic acid (PFDoA)	0.22	0.52	0.080	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.52	0.086	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.52	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
N-EtFOSAA	ND	0.52	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
N-MeFOSAA	ND	0.52	0.095	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.52	0.099	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.52	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.52	0.096	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.52	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.52	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.52	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.52	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.52	0.17	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.52	0.083	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.52	0.098	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.52	0.096	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.52	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.52	0.076	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluoroundecanoic acid (PFUnA)	0.43	0.52	0.095	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.52	0.081	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluoroheptanoic acid (PFHpA)	0.084	0.52	0.075	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluorooctanoic acid (PFOA)	0.37	0.52	0.15	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluorooctanesulfonic acid (PFOS)	6.9	0.52	0.071	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH
Perfluorononanoic acid (PFNA)	0.32	0.52	0.086	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 16:59	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-12 (0-12)

Sampled: 10/28/2021 12:30

Sample ID: 21J1956-13

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	72.8		% Wt	1		SM 2540G	11/11/21	11/12/21 9:11	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-12 (12-24)

Sampled: 10/28/2021 12:30

Sample ID: 21J1956-14

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.11	0.54	0.072	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.54	0.083	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.54	0.083	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.54	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.54	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
9Cl-PF3ONS (F53B Major)	ND	0.54	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.54	0.17	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.54	0.26	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.54	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluorodecanoic acid (PFDA)	0.11	0.54	0.070	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.54	0.083	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.54	0.089	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.54	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
N-EtFOSAA	ND	0.54	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
N-MeFOSAA	ND	0.54	0.099	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.54	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.54	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.54	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.54	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.54	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.54	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.54	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.54	0.17	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.54	0.087	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.54	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.54	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.54	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.54	0.080	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.54	0.099	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.54	0.084	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluoroheptanoic acid (PFHpA)	0.11	0.54	0.078	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluorooctanoic acid (PFOA)	0.69	0.54	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluorooctanesulfonic acid (PFOS)	2.3	0.54	0.074	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH
Perfluorononanoic acid (PFNA)	0.32	0.54	0.089	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:06	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-12 (12-24)

Sampled: 10/28/2021 12:30

Sample ID: 21J1956-14

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	73.6		% Wt	1		SM 2540G	11/11/21	11/12/21 9:11	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-13 (0-12)

Sampled: 10/28/2021 13:00

Sample ID: 21J1956-15

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.17	0.55	0.073	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.55	0.084	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluoropentanoic acid (PFPeA)	0.10	0.55	0.084	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluorohexanoic acid (PFHxA)	0.13	0.55	0.10	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.55	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
9Cl-PF3ONS (F53B Major)	ND	0.55	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.55	0.18	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.55	0.26	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.55	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluorodecanoic acid (PFDA)	0.17	0.55	0.071	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.55	0.084	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.55	0.090	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.55	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
N-EtFOSAA	ND	0.55	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
N-MeFOSAA	ND	0.55	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.55	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.55	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.55	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.55	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.55	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.55	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.55	0.17	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.55	0.17	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluorohexanesulfonic acid (PFHxS)	0.33	0.55	0.088	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.55	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.55	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.55	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.55	0.081	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluoroundecanoic acid (PFUnA)	0.12	0.55	0.10	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.55	0.085	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluoroheptanoic acid (PFHpA)	0.11	0.55	0.079	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluorooctanoic acid (PFOA)	0.48	0.55	0.16	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluorooctanesulfonic acid (PFOS)	2.4	0.55	0.074	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH
Perfluorononanoic acid (PFNA)	0.32	0.55	0.090	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:13	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-13 (0-12)

Sampled: 10/28/2021 13:00

Sample ID: 21J1956-15

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	69.1		% Wt	1		SM 2540G	11/11/21	11/12/21 9:11	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-13 (12-24)

Sampled: 10/28/2021 13:00

Sample ID: 21J1956-16

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.078	0.52	0.069	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluorobutanesulfonic acid (PFBS)	0.10	0.52	0.080	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluoropentanoic acid (PFPeA)	0.092	0.52	0.080	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluorohexanoic acid (PFHxA)	0.25	0.52	0.097	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.52	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
9Cl-PF3ONS (F53B Major)	ND	0.52	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.52	0.17	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.52	0.25	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.52	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluorodecanoic acid (PFDA)	ND	0.52	0.067	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.52	0.080	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.52	0.086	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.52	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
N-EtFOSAA	ND	0.52	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
N-MeFOSAA	ND	0.52	0.095	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.52	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.52	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.52	0.096	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.52	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.52	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.52	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.52	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.52	0.17	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluorohexanesulfonic acid (PFHxS)	0.96	0.52	0.083	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.52	0.098	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.52	0.096	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.52	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluoropentanesulfonic acid (PFPeS)	0.092	0.52	0.076	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.52	0.095	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.52	0.081	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluoroheptanoic acid (PFHpA)	0.14	0.52	0.075	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluorooctanoic acid (PFOA)	0.70	0.52	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluorooctanesulfonic acid (PFOS)	2.7	0.52	0.071	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH
Perfluorononanoic acid (PFNA)	ND	0.52	0.086	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:21	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-13 (12-24)

Sampled: 10/28/2021 13:00

Sample ID: 21J1956-16

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	76.3		% Wt	1		SM 2540G	11/11/21	11/12/21 9:11	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-14 (0-12)

Sampled: 10/28/2021 13:30

Sample ID: 21J1956-17

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.40	0.51	0.069	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.51	0.079	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluoropentanoic acid (PFPeA)	0.48	0.51	0.079	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluorohexanoic acid (PFHxA)	0.59	0.51	0.096	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.51	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
9Cl-PF3ONS (F53B Major)	ND	0.51	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.51	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.51	0.25	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.51	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluorodecanoic acid (PFDA)	0.27	0.51	0.066	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluorododecanoic acid (PFDoA)	0.13	0.51	0.079	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.51	0.085	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.51	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
N-EtFOSAA	ND	0.51	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
N-MeFOSAA	ND	0.51	0.094	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.51	0.098	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.51	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.51	0.095	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.51	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.51	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.51	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.51	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.51	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.51	0.082	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.51	0.097	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.51	0.095	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.51	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.51	0.076	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluoroundecanoic acid (PFUnA)	0.12	0.51	0.094	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.51	0.080	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluoroheptanoic acid (PFHpA)	0.11	0.51	0.074	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluorooctanoic acid (PFOA)	0.46	0.51	0.15	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluorooctanesulfonic acid (PFOS)	0.80	0.51	0.070	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH
Perfluorononanoic acid (PFNA)	0.22	0.51	0.085	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:28	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-14 (0-12)

Sampled: 10/28/2021 13:30

Sample ID: 21J1956-17

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	74.8		% Wt	1		SM 2540G	11/11/21	11/12/21 9:11	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-14 (12-24)

Sampled: 10/28/2021 13:30

Sample ID: 21J1956-18

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.11	0.50	0.067	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluorobutanesulfonic acid (PFBS)	0.10	0.50	0.077	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluoropentanoic acid (PFPeA)	0.16	0.50	0.077	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluorohexanoic acid (PFHxA)	0.79	0.50	0.094	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.50	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
9Cl-PF3ONS (F53B Major)	ND	0.50	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.50	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.50	0.24	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.50	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluorodecanoic acid (PFDA)	0.090	0.50	0.065	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.50	0.077	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.50	0.082	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.50	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
N-EtFOSAA	ND	0.50	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
N-MeFOSAA	ND	0.50	0.091	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.50	0.096	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.50	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.50	0.092	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.50	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.50	0.098	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.50	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.50	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.50	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.50	0.080	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.50	0.095	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.50	0.092	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.50	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.50	0.074	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.50	0.091	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.50	0.078	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluoroheptanoic acid (PFHpA)	0.18	0.50	0.072	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluorooctanoic acid (PFOA)	0.58	0.50	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluorooctanesulfonic acid (PFOS)	1.6	0.50	0.068	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH
Perfluorononanoic acid (PFNA)	0.27	0.50	0.082	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:35	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-14 (12-24)

Sampled: 10/28/2021 13:30

Sample ID: 21J1956-18

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	79.6		% Wt	1		SM 2540G	11/11/21	11/12/21 9:12	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-15 (0-12)

Sampled: 10/28/2021 14:00

Sample ID: 21J1956-19

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.30	0.51	0.069	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluorobutanesulfonic acid (PFBS)	0.11	0.51	0.079	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluoropentanoic acid (PFPeA)	0.69	0.51	0.079	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluorohexanoic acid (PFHxA)	0.51	0.51	0.096	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.51	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
9Cl-PF3ONS (F53B Major)	ND	0.51	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.51	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.51	0.25	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.51	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluorodecanoic acid (PFDA)	0.16	0.51	0.066	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.51	0.079	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.51	0.085	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.51	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
N-EtFOSAA	ND	0.51	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
N-MeFOSAA	ND	0.51	0.094	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.51	0.098	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.51	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.51	0.095	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.51	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.51	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.51	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.51	0.16	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluoro-1-butanefulfonamide (FBSA)	0.18	0.51	0.16	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.51	0.082	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.51	0.097	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.51	0.095	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.51	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.51	0.075	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.51	0.094	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.51	0.080	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluoroheptanoic acid (PFHpA)	0.10	0.51	0.074	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluorooctanoic acid (PFOA)	0.63	0.51	0.15	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluorooctanesulfonic acid (PFOS)	2.1	0.51	0.070	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH
Perfluorononanoic acid (PFNA)	0.23	0.51	0.085	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:42	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-15 (0-12)

Sampled: 10/28/2021 14:00

Sample ID: 21J1956-19

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	75.5		% Wt	1		SM 2540G	11/11/21	11/12/21 9:12	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-15 (12-24)

Sampled: 10/28/2021 14:00

Sample ID: 21J1956-20

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.11	0.44	0.058	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.44	0.067	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluoropentanoic acid (PFPeA)	0.28	0.44	0.067	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluorohexanoic acid (PFHxA)	0.45	0.44	0.082	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.44	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
9Cl-PF3ONS (F53B Major)	ND	0.44	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.44	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.44	0.21	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.44	0.11	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluorodecanoic acid (PFDA)	ND	0.44	0.056	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.44	0.067	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.44	0.072	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.44	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
N-EtFOSAA	ND	0.44	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
N-MeFOSAA	ND	0.44	0.080	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.44	0.084	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.44	0.098	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.44	0.081	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.44	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.44	0.086	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.44	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.44	0.13	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.44	0.14	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.44	0.070	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.44	0.083	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.44	0.081	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.44	0.10	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.44	0.064	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.44	0.080	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.44	0.068	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluoroheptanoic acid (PFHpA)	0.091	0.44	0.063	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluorooctanoic acid (PFOA)	0.55	0.44	0.12	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluorooctanesulfonic acid (PFOS)	1.1	0.44	0.059	µg/kg dry	1		SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH
Perfluorononanoic acid (PFNA)	0.14	0.44	0.072	µg/kg dry	1	J	SOP-466 PFAS	11/4/21	11/11/21 17:49	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-15 (12-24)

Sampled: 10/28/2021 14:00

Sample ID: 21J1956-20

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	87.1		% Wt	1		SM 2540G	11/11/21	11/12/21 9:12	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-16 (0-12)

Sampled: 10/28/2021 14:30

Sample ID: 21J1956-21

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.14	0.60	0.080	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.60	0.092	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluoropentanoic acid (PFPeA)	0.11	0.60	0.092	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluorohexanoic acid (PFHxA)	0.15	0.60	0.11	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.60	0.17	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
9Cl-PF3ONS (F53B Major)	ND	0.60	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.60	0.19	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.60	0.29	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.60	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluorodecanoic acid (PFDA)	ND	0.60	0.077	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.60	0.092	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.60	0.098	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.60	0.18	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
N-EtFOSAA	ND	0.60	0.17	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
N-MeFOSAA	ND	0.60	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.60	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.60	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.60	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.60	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.60	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.60	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.60	0.18	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.60	0.19	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluorohexanesulfonic acid (PFHxS)	0.17	0.60	0.096	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.60	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.60	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.60	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.60	0.088	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.60	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.60	0.093	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluoroheptanoic acid (PFHpA)	0.17	0.60	0.086	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluorooctanoic acid (PFOA)	0.76	0.60	0.17	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluorooctanesulfonic acid (PFOS)	0.90	0.60	0.081	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH
Perfluorononanoic acid (PFNA)	0.13	0.60	0.098	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/10/21 20:55	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: 30MTN S-16 (0-12)

Sampled: 10/28/2021 14:30

Sample ID: 21J1956-21

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	66.2		% Wt	1		SM 2540G	11/11/21	11/12/21 9:12	WT

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: Rinsate

Sampled: 10/28/2021 08:00

Sample ID: 21J1956-22

Sample Matrix: Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	1.8	0.69	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	1.8	0.26	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluoropentanoic acid (PFPeA)	ND	1.8	0.36	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.8	0.36	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.8	0.59	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
9Cl-PF3ONS (F53B Major)	ND	1.8	0.36	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.8	0.22	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.8	0.56	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluorodecanoic acid (PFDA)	ND	1.8	0.45	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.8	0.41	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.8	0.21	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.8	0.87	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
N-EtFOSAA	ND	1.8	0.58	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
N-MeFOSAA	ND	1.8	0.70	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.8	0.34	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	1.8	0.26	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.8	0.26	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	1.8	0.30	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluorooctanesulfonamide (FOSA)	ND	1.8	0.39	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluorononanesulfonic acid (PFNS)	ND	1.8	0.15	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.8	0.29	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.8	0.18	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8	0.31	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.8	0.38	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.8	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.8	0.34	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	1.8	0.24	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.8	0.34	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.8	0.25	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.8	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluorooctanoic acid (PFOA)	ND	1.8	0.63	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.8	0.56	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH
Perfluorononanoic acid (PFNA)	ND	1.8	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:22	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: Trip Blank

Sampled: 10/28/2021 00:00

Sample ID: 21J1956-23

Sample Matrix: Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	1.9	0.69	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluoropentanoic acid (PFPeA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.59	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.56	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9	0.45	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	0.21	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.87	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
N-EtFOSAA	ND	1.9	0.58	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
N-MeFOSAA	ND	1.9	0.70	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.30	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.39	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	0.29	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	0.18	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	0.31	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.39	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	1.9	0.24	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9	0.63	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	0.56	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH
Perfluorononanoic acid (PFNA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:29	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: Field Blank

Sampled: 10/28/2021 08:00

Sample ID: 21J1956-24

Sample Matrix: Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	1.9	0.70	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluoropentanoic acid (PFPeA)	ND	1.9	0.37	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.60	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.57	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9	0.46	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.88	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
N-EtFOSAA	ND	1.9	0.59	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
N-MeFOSAA	ND	1.9	0.71	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.30	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.39	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	0.29	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	1.9	0.18	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.39	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	1.9	0.24	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9	0.64	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	0.56	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH
Perfluorononanoic acid (PFNA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:36	BLH

Project Location: 30 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1956

Date Received: 10/29/2021

Field Sample #: Equipment Blank

Sampled: 10/28/2021 10:00

Sample ID: 21J1956-25

Sample Matrix: Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	1.9	0.69	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluoropentanoic acid (PFPeA)	ND	1.9	0.37	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.60	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.57	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9	0.46	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.87	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
N-EtFOSAA	ND	1.9	0.59	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
N-MeFOSAA	ND	1.9	0.71	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.30	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.39	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	0.29	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	0.18	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.39	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	1.9	0.24	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9	0.63	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	0.56	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH
Perfluorononanoic acid (PFNA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 17:44	BLH

Sample Extraction Data

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
21J1956-01 [30MTN S-2 (6-12)]	B294465	11/11/21
21J1956-02 [30MTN S-3 (6-12)]	B294465	11/11/21
21J1956-03 [30MTN S-3 (12-24)]	B294465	11/11/21
21J1956-04 [30MTN S-4 (6-12)]	B294465	11/11/21
21J1956-05 [30MTN S-5 (6-12)]	B294465	11/11/21
21J1956-06 [30MTN S-5 (12-24)]	B294465	11/11/21
21J1956-07 [30MTN S-7 (0-12)]	B294465	11/11/21
21J1956-08 [30MTN S-8 (0-12)]	B294465	11/11/21
21J1956-09 [30MTN S-9 (0-12)]	B294465	11/11/21
21J1956-10 [30MTN S-10 (0-12)]	B294465	11/11/21
21J1956-11 [30MTN S-11 (0-12)]	B294465	11/11/21
21J1956-12 [30MTN S-11 (24-36)]	B294465	11/11/21
21J1956-13 [30MTN S-12 (0-12)]	B294465	11/11/21
21J1956-14 [30MTN S-12 (12-24)]	B294465	11/11/21
21J1956-15 [30MTN S-13 (0-12)]	B294465	11/11/21
21J1956-16 [30MTN S-13 (12-24)]	B294465	11/11/21
21J1956-17 [30MTN S-14 (0-12)]	B294465	11/11/21
21J1956-18 [30MTN S-14 (12-24)]	B294465	11/11/21
21J1956-19 [30MTN S-15 (0-12)]	B294465	11/11/21
21J1956-20 [30MTN S-15 (12-24)]	B294465	11/11/21
21J1956-21 [30MTN S-16 (0-12)]	B294465	11/11/21

Prep Method: SOP 454-PFAAS-SOP-454 PFAS

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1956-22 [Rinsate]	B293915	271	1.00	11/04/21
21J1956-23 [Trip Blank]	B293915	270	1.00	11/04/21
21J1956-24 [Field Blank]	B293915	268	1.00	11/04/21
21J1956-25 [Equipment Blank]	B293915	269	1.00	11/04/21

Prep Method: SOP 465-PFAAS-SOP-466 PFAS

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21J1956-21 [30MTN S-16 (0-12)]	B294033	5.68	5.00	11/09/21

Prep Method: SOP 465-PFAAS-SOP-466 PFAS

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21J1956-01 [30MTN S-2 (6-12)]	B294034	5.81	5.00	11/04/21
21J1956-02 [30MTN S-3 (6-12)]	B294034	5.60	5.00	11/04/21
21J1956-03 [30MTN S-3 (12-24)]	B294034	5.79	5.00	11/04/21
21J1956-04 [30MTN S-4 (6-12)]	B294034	5.76	5.00	11/04/21
21J1956-05 [30MTN S-5 (6-12)]	B294034	5.77	5.00	11/04/21
21J1956-06 [30MTN S-5 (12-24)]	B294034	5.87	5.00	11/04/21
21J1956-07 [30MTN S-7 (0-12)]	B294034	5.69	5.00	11/04/21
21J1956-08 [30MTN S-8 (0-12)]	B294034	5.88	5.00	11/04/21
21J1956-09 [30MTN S-9 (0-12)]	B294034	5.90	5.00	11/04/21
21J1956-10 [30MTN S-10 (0-12)]	B294034	5.88	5.00	11/04/21
21J1956-11 [30MTN S-11 (0-12)]	B294034	5.93	5.00	11/04/21
21J1956-12 [30MTN S-11 (24-36)]	B294034	5.66	5.00	11/04/21
21J1956-13 [30MTN S-12 (0-12)]	B294034	5.94	5.00	11/04/21

Sample Extraction Data

Prep Method: SOP 465-PFAAS-SOP-466 PFAS

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21J1956-14 [30MTN S-12 (12-24)]	B294034	5.63	5.00	11/04/21
21J1956-15 [30MTN S-13 (0-12)]	B294034	5.93	5.00	11/04/21
21J1956-16 [30MTN S-13 (12-24)]	B294034	5.66	5.00	11/04/21
21J1956-17 [30MTN S-14 (0-12)]	B294034	5.84	5.00	11/04/21
21J1956-18 [30MTN S-14 (12-24)]	B294034	5.64	5.00	11/04/21
21J1956-19 [30MTN S-15 (0-12)]	B294034	5.79	5.00	11/04/21
21J1956-20 [30MTN S-15 (12-24)]	B294034	5.91	5.00	11/04/21

Prep Method: SOP 465-PFAAS-SOP-466 PFAS

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21J1956-01RE1 [30MTN S-2 (6-12)]	B294575	0.509	5.00	11/13/21
21J1956-04RE1 [30MTN S-4 (6-12)]	B294575	0.516	5.00	11/13/21
21J1956-10RE1 [30MTN S-10 (0-12)]	B294575	0.522	5.00	11/13/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B293915 - SOP 454-PFAAS

Blank (B293915-BLK1)

Prepared: 11/04/21 Analyzed: 11/05/21

Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L
Perfluoropentanoic acid (PFPeA)	ND	2.0	ng/L
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L
11Cl-PF3OUdS (F53B Minor)	ND	2.0	ng/L
9Cl-PF3ONS (F53B Major)	ND	2.0	ng/L
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	ng/L
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	ng/L
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	ng/L
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	2.0	ng/L
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L
N-EtFOSAA	ND	2.0	ng/L
N-MeFOSAA	ND	2.0	ng/L
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	ng/L
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L
Perfluorononanesulfonic acid (PFNS)	ND	2.0	ng/L
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	ng/L
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	ng/L
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	ng/L
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	ng/L
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	ng/L
Perfluoropentanesulfonic acid (PFPeS)	ND	2.0	ng/L
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	ng/L
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L
Perfluorooctanoic acid (PFOA)	ND	2.0	ng/L
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L

LCS (B293915-BS1)

Prepared: 11/04/21 Analyzed: 11/05/21

Perfluorobutanoic acid (PFBA)	8.29	2.0	ng/L	9.97	83.1	73-129
Perfluorobutanesulfonic acid (PFBS)	7.80	2.0	ng/L	8.82	88.5	72-130
Perfluoropentanoic acid (PFPeA)	8.19	2.0	ng/L	9.97	82.1	72-129
Perfluorohexanoic acid (PFHxA)	8.32	2.0	ng/L	9.97	83.4	72-129
11Cl-PF3OUdS (F53B Minor)	7.82	2.0	ng/L	9.39	83.2	50-150
9Cl-PF3ONS (F53B Major)	8.43	2.0	ng/L	9.29	90.8	50-150
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	8.24	2.0	ng/L	9.39	87.8	50-150
Hexafluoropropylene oxide dimer acid (HFPO-DA)	8.95	2.0	ng/L	9.97	89.8	50-150
8:2 Fluorotelomersulfonic acid (8:2FTS A)	8.86	2.0	ng/L	9.57	92.6	67-138
Perfluorodecanoic acid (PFDA)	7.33	2.0	ng/L	9.97	73.6	71-129
Perfluorododecanoic acid (PFDoA)	7.95	2.0	ng/L	9.97	79.7	72-134
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	8.06	2.0	ng/L	8.87	90.8	50-150

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B293915 - SOP 454-PFAAS

LCS (B293915-BS1)

Prepared: 11/04/21 Analyzed: 11/05/21

Perfluoroheptanesulfonic acid (PFHpS)	9.17	2.0	ng/L	9.52		96.3	69-134			
N-EtFOSAA	10.8	2.0	ng/L	9.97		108	61-135			
N-MeFOSAA	9.69	2.0	ng/L	9.97		97.2	65-136			
Perfluorotetradecanoic acid (PFTA)	8.30	2.0	ng/L	9.97		83.2	71-132			
Perfluorotridecanoic acid (PFTTrDA)	8.66	2.0	ng/L	9.97		86.9	65-144			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	8.62	2.0	ng/L	9.32		92.5	63-143			
Perfluorodecanesulfonic acid (PFDS)	8.14	2.0	ng/L	9.62		84.7	53-142			
Perfluorooctanesulfonamide (FOSA)	8.41	2.0	ng/L	9.97		84.4	67-137			
Perfluorononanesulfonic acid (PFNS)	8.70	2.0	ng/L	9.57		90.9	69-127			
Perfluoro-1-hexanesulfonamide (FHxSA)	8.49	2.0	ng/L	9.97		85.2	50-150			
Perfluoro-1-butanefulfonamide (FBSA)	8.51	2.0	ng/L	9.97		85.4	50-150			
Perfluorohexanesulfonic acid (PFHxS)	7.65	2.0	ng/L	9.07		84.4	68-131			
Perfluoro-4-oxapentanoic acid (PFMPA)	8.82	2.0	ng/L	9.97		88.4	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	8.78	2.0	ng/L	9.97		88.1	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	9.54	2.0	ng/L	9.47		101	64-140			
Perfluoropentanesulfonic acid (PFPeS)	7.39	2.0	ng/L	9.37		78.8	71-127			
Perfluoroundecanoic acid (PFUnA)	8.53	2.0	ng/L	9.97		85.6	69-133			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	9.37	2.0	ng/L	9.97		94.0	50-150			
Perfluoroheptanoic acid (PFHpA)	8.83	2.0	ng/L	9.97		88.6	72-130			
Perfluorooctanoic acid (PFOA)	8.62	2.0	ng/L	9.97		86.5	71-133			
Perfluorooctanesulfonic acid (PFOS)	8.14	2.0	ng/L	9.22		88.3	65-140			
Perfluorononanoic acid (PFNA)	8.19	2.0	ng/L	9.97		82.2	69-130			

LCS Dup (B293915-BSD1)

Prepared: 11/04/21 Analyzed: 11/05/21

Perfluorobutanoic acid (PFBA)	9.41	2.0	ng/L	9.77		96.4	73-129	12.7	30	
Perfluorobutanesulfonic acid (PFBS)	8.87	2.0	ng/L	8.64		103	72-130	12.8	30	
Perfluoropentanoic acid (PFPeA)	9.45	2.0	ng/L	9.77		96.8	72-129	14.3	30	
Perfluorohexanoic acid (PFHxA)	9.54	2.0	ng/L	9.77		97.7	72-129	13.8	30	
11Cl-PF3OUdS (F53B Minor)	8.31	2.0	ng/L	9.20		90.3	50-150	6.10	30	
9Cl-PF3ONS (F53B Major)	9.20	2.0	ng/L	9.10		101	50-150	8.72	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	9.34	2.0	ng/L	9.20		101	50-150	12.4	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	8.49	2.0	ng/L	9.77		86.9	50-150	5.34	30	
8:2 Fluorotelomersulfonic acid (8:2FTS A)	10.1	2.0	ng/L	9.37		107	67-138	12.7	30	
Perfluorodecanoic acid (PFDA)	9.22	2.0	ng/L	9.77		94.4	71-129	22.7	30	
Perfluorododecanoic acid (PFDoA)	9.67	2.0	ng/L	9.77		99.0	72-134	19.5	30	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	9.31	2.0	ng/L	8.69		107	50-150	14.4	30	
Perfluoroheptanesulfonic acid (PFHpS)	9.81	2.0	ng/L	9.33		105	69-134	6.74	30	
N-EtFOSAA	10.8	2.0	ng/L	9.77		110	61-135	0.189	30	
N-MeFOSAA	11.3	2.0	ng/L	9.77		116	65-136	15.7	30	
Perfluorotetradecanoic acid (PFTA)	9.19	2.0	ng/L	9.77		94.1	71-132	10.1	30	
Perfluorotridecanoic acid (PFTTrDA)	9.44	2.0	ng/L	9.77		96.7	65-144	8.61	30	
4:2 Fluorotelomersulfonic acid (4:2FTS A)	9.83	2.0	ng/L	9.13		108	63-143	13.1	30	
Perfluorodecanesulfonic acid (PFDS)	9.38	2.0	ng/L	9.42		99.5	53-142	14.1	30	
Perfluorooctanesulfonamide (FOSA)	9.40	2.0	ng/L	9.77		96.2	67-137	11.1	30	
Perfluorononanesulfonic acid (PFNS)	9.91	2.0	ng/L	9.37		106	69-127	13.0	30	
Perfluoro-1-hexanesulfonamide (FHxSA)	10.1	2.0	ng/L	9.77		103	50-150	17.2	30	
Perfluoro-1-butanefulfonamide (FBSA)	9.79	2.0	ng/L	9.77		100	50-150	14.0	30	
Perfluorohexanesulfonic acid (PFHxS)	8.57	2.0	ng/L	8.89		96.5	68-131	11.4	30	
Perfluoro-4-oxapentanoic acid (PFMPA)	10.2	2.0	ng/L	9.77		104	50-150	14.4	30	
Perfluoro-5-oxahexanoic acid (PFMBA)	10.2	2.0	ng/L	9.77		104	50-150	14.7	30	

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B293915 - SOP 454-PFAAS

LCS Dup (B293915-BSD1)

Prepared: 11/04/21 Analyzed: 11/05/21

6:2 Fluorotelomersulfonic acid (6:2FTS A)	10.7	2.0	ng/L	9.28		116	64-140	11.8	30	
Perfluoropentanesulfonic acid (PFPeS)	8.78	2.0	ng/L	9.18		95.6	71-127	17.2	30	
Perfluoroundecanoic acid (PFUnA)	9.35	2.0	ng/L	9.77		95.8	69-133	9.14	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	10.9	2.0	ng/L	9.77		111	50-150	14.7	30	
Perfluoroheptanoic acid (PFHpA)	10.2	2.0	ng/L	9.77		105	72-130	14.7	30	
Perfluorooctanoic acid (PFOA)	10.4	2.0	ng/L	9.77		107	71-133	18.8	30	
Perfluorooctanesulfonic acid (PFOS)	9.09	2.0	ng/L	9.03		101	65-140	11.0	30	
Perfluorononanoic acid (PFNA)	9.86	2.0	ng/L	9.77		101	69-130	18.5	30	

Batch B294033 - SOP 465-PFAAS

Blank (B294033-BLK1)

Prepared: 11/09/21 Analyzed: 11/10/21

Perfluorobutanoic acid (PFBA)	ND	0.39	µg/kg wet							
Perfluorobutanesulfonic acid (PFBS)	ND	0.39	µg/kg wet							
Perfluoropentanoic acid (PFPeA)	ND	0.39	µg/kg wet							
Perfluorohexanoic acid (PFHxA)	ND	0.39	µg/kg wet							
11Cl-PF3OUdS (F53B Minor)	ND	0.39	µg/kg wet							
9Cl-PF3ONS (F53B Major)	ND	0.39	µg/kg wet							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.39	µg/kg wet							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.39	µg/kg wet							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.39	µg/kg wet							
Perfluorodecanoic acid (PFDA)	ND	0.39	µg/kg wet							
Perfluorododecanoic acid (PFDoA)	ND	0.39	µg/kg wet							
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.39	µg/kg wet							
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.39	µg/kg wet							
N-EtFOSAA	ND	0.39	µg/kg wet							
N-MeFOSAA	ND	0.39	µg/kg wet							
Perfluorotetradecanoic acid (PFTA)	ND	0.39	µg/kg wet							
Perfluorotridecanoic acid (PFTrDA)	ND	0.39	µg/kg wet							
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.39	µg/kg wet							
Perfluorodecanesulfonic acid (PFDS)	ND	0.39	µg/kg wet							
Perfluorooctanesulfonamide (FOSA)	ND	0.39	µg/kg wet							
Perfluorononanesulfonic acid (PFNS)	ND	0.39	µg/kg wet							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.39	µg/kg wet							
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.39	µg/kg wet							
Perfluorohexanesulfonic acid (PFHxS)	ND	0.39	µg/kg wet							
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.39	µg/kg wet							
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.39	µg/kg wet							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.39	µg/kg wet							
Perfluoropentanesulfonic acid (PFPeS)	ND	0.39	µg/kg wet							
Perfluoroundecanoic acid (PFUnA)	ND	0.39	µg/kg wet							
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.39	µg/kg wet							
Perfluoroheptanoic acid (PFHpA)	ND	0.39	µg/kg wet							
Perfluorooctanoic acid (PFOA)	ND	0.39	µg/kg wet							
Perfluorooctanesulfonic acid (PFOS)	ND	0.39	µg/kg wet							
Perfluorononanoic acid (PFNA)	ND	0.39	µg/kg wet							

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B294033 - SOP 465-PFAAS

LCS (B294033-BS1)

Prepared: 11/09/21 Analyzed: 11/10/21

Perfluorobutanoic acid (PFBA)	1.89	0.38	µg/kg wet	2.12		89.1	71-135			
Perfluorobutanesulfonic acid (PFBS)	1.77	0.38	µg/kg wet	1.87		94.6	72-128			
Perfluoropentanoic acid (PFPeA)	1.91	0.38	µg/kg wet	2.12		90.2	69-132			
Perfluorohexanoic acid (PFHxA)	1.89	0.38	µg/kg wet	2.12		89.0	70-132			
11Cl-PF3OUdS (F53B Minor)	1.89	0.38	µg/kg wet	2.00		94.6	50-150			
9Cl-PF3ONS (F53B Major)	1.88	0.38	µg/kg wet	1.97		95.3	50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	1.94	0.38	µg/kg wet	2.00		97.4	50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	1.77	0.38	µg/kg wet	2.12		83.4	50-150			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	1.87	0.38	µg/kg wet	2.03		92.1	65-137			
Perfluorodecanoic acid (PFDA)	1.80	0.38	µg/kg wet	2.12		85.1	69-133			
Perfluorododecanoic acid (PFDoA)	1.82	0.38	µg/kg wet	2.12		85.8	69-135			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	1.90	0.38	µg/kg wet	1.89		101	50-150			
Perfluoroheptanesulfonic acid (PFHpS)	1.97	0.38	µg/kg wet	2.03		97.1	70-132			
N-EtFOSAA	2.09	0.38	µg/kg wet	2.12		98.5	61-139			
N-MeFOSAA	2.13	0.38	µg/kg wet	2.12		100	63-144			
Perfluorotetradecanoic acid (PFTA)	1.91	0.38	µg/kg wet	2.12		90.1	69-133			
Perfluorotridecanoic acid (PFTrDA)	2.00	0.38	µg/kg wet	2.12		94.4	66-139			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.03	0.38	µg/kg wet	1.98		102	62-145			
Perfluorodecanesulfonic acid (PFDS)	1.90	0.38	µg/kg wet	2.04		93.2	59-134			
Perfluorooctanesulfonamide (FOSA)	1.83	0.38	µg/kg wet	2.12		86.2	67-137			
Perfluorononanesulfonic acid (PFNS)	2.08	0.38	µg/kg wet	2.03		102	69-125			
Perfluoro-1-hexanesulfonamide (FHxSA)	2.15	0.38	µg/kg wet	2.12		102	50-150			
Perfluoro-1-butanesulfonamide (FBSA)	2.05	0.38	µg/kg wet	2.12		96.8	50-150			
Perfluorohexanesulfonic acid (PFHxS)	1.81	0.38	µg/kg wet	1.93		93.9	67-130			
Perfluoro-4-oxapentanoic acid (PFMPA)	2.17	0.38	µg/kg wet	2.12		103	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	2.13	0.38	µg/kg wet	2.12		101	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.16	0.38	µg/kg wet	2.01		107	64-140			
Perfluoropentanesulfonic acid (PFPeS)	1.73	0.38	µg/kg wet	1.99		86.7	73-123			
Perfluoroundecanoic acid (PFUnA)	1.87	0.38	µg/kg wet	2.12		88.2	64-136			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.21	0.38	µg/kg wet	2.12		104	50-150			
Perfluoroheptanoic acid (PFHpA)	2.04	0.38	µg/kg wet	2.12		96.5	71-131			
Perfluorooctanoic acid (PFOA)	2.05	0.38	µg/kg wet	2.12		96.9	69-133			
Perfluorooctanesulfonic acid (PFOS)	1.89	0.38	µg/kg wet	1.96		96.5	68-136			
Perfluorononanoic acid (PFNA)	2.09	0.38	µg/kg wet	2.12		98.7	72-129			

Batch B294034 - SOP 465-PFAAS

Blank (B294034-BLK1)

Prepared: 11/04/21 Analyzed: 11/11/21

Perfluorobutanoic acid (PFBA)	ND	0.38	µg/kg wet							
Perfluorobutanesulfonic acid (PFBS)	ND	0.38	µg/kg wet							
Perfluoropentanoic acid (PFPeA)	ND	0.38	µg/kg wet							
Perfluorohexanoic acid (PFHxA)	ND	0.38	µg/kg wet							
11Cl-PF3OUdS (F53B Minor)	ND	0.38	µg/kg wet							
9Cl-PF3ONS (F53B Major)	ND	0.38	µg/kg wet							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.38	µg/kg wet							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.38	µg/kg wet							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.38	µg/kg wet							
Perfluorodecanoic acid (PFDA)	ND	0.38	µg/kg wet							
Perfluorododecanoic acid (PFDoA)	ND	0.38	µg/kg wet							

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B294034 - SOP 465-PFAAS

Blank (B294034-BLK1)

Prepared: 11/04/21 Analyzed: 11/11/21

Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.38	µg/kg wet							
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.38	µg/kg wet							
N-EtFOSAA	ND	0.38	µg/kg wet							
N-MeFOSAA	ND	0.38	µg/kg wet							
Perfluorotetradecanoic acid (PFTA)	ND	0.38	µg/kg wet							
Perfluorotridecanoic acid (PFTrDA)	ND	0.38	µg/kg wet							
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.38	µg/kg wet							
Perfluorodecanesulfonic acid (PFDS)	ND	0.38	µg/kg wet							
Perfluorooctanesulfonamide (FOSA)	ND	0.38	µg/kg wet							
Perfluorononanesulfonic acid (PFNS)	ND	0.38	µg/kg wet							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.38	µg/kg wet							
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.38	µg/kg wet							
Perfluorohexanesulfonic acid (PFHxS)	ND	0.38	µg/kg wet							
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.38	µg/kg wet							
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.38	µg/kg wet							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.38	µg/kg wet							
Perfluoropentanesulfonic acid (PFPeS)	ND	0.38	µg/kg wet							
Perfluoroundecanoic acid (PFUnA)	ND	0.38	µg/kg wet							
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.38	µg/kg wet							
Perfluoroheptanoic acid (PFHpA)	ND	0.38	µg/kg wet							
Perfluorooctanoic acid (PFOA)	ND	0.38	µg/kg wet							
Perfluorooctanesulfonic acid (PFOS)	ND	0.38	µg/kg wet							
Perfluorononanoic acid (PFNA)	ND	0.38	µg/kg wet							

LCS (B294034-BS1)

Prepared: 11/04/21 Analyzed: 11/11/21

Perfluorobutanoic acid (PFBA)	2.10	0.38	µg/kg wet	2.11	99.4	71-135
Perfluorobutanesulfonic acid (PFBS)	1.97	0.38	µg/kg wet	1.86	106	72-128
Perfluoropentanoic acid (PFPeA)	2.08	0.38	µg/kg wet	2.11	98.6	69-132
Perfluorohexanoic acid (PFHxA)	2.04	0.38	µg/kg wet	2.11	96.6	70-132
11Cl-PF3OUdS (F53B Minor)	2.25	0.38	µg/kg wet	1.99	113	50-150
9Cl-PF3ONS (F53B Major)	2.30	0.38	µg/kg wet	1.97	117	50-150
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	2.10	0.38	µg/kg wet	1.99	106	50-150
Hexafluoropropylene oxide dimer acid (HFPO-DA)	2.52	0.38	µg/kg wet	2.11	120	50-150
8:2 Fluorotelomersulfonic acid (8:2FTS A)	2.25	0.38	µg/kg wet	2.02	111	65-137
Perfluorodecanoic acid (PFDA)	2.19	0.38	µg/kg wet	2.11	104	69-133
Perfluorododecanoic acid (PFDoA)	2.08	0.38	µg/kg wet	2.11	98.8	69-135
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	2.11	0.38	µg/kg wet	1.88	112	50-150
Perfluoroheptanesulfonic acid (PFHpS)	2.39	0.38	µg/kg wet	2.02	119	70-132
N-EtFOSAA	2.50	0.38	µg/kg wet	2.11	118	61-139
N-MeFOSAA	2.68	0.38	µg/kg wet	2.11	127	63-144
Perfluorotetradecanoic acid (PFTA)	2.09	0.38	µg/kg wet	2.11	99.0	69-133
Perfluorotridecanoic acid (PFTrDA)	2.10	0.38	µg/kg wet	2.11	99.3	66-139
4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.21	0.38	µg/kg wet	1.97	112	62-145
Perfluorodecanesulfonic acid (PFDS)	2.20	0.38	µg/kg wet	2.03	108	59-134
Perfluorooctanesulfonamide (FOSA)	2.20	0.38	µg/kg wet	2.11	105	67-137
Perfluorononanesulfonic acid (PFNS)	2.22	0.38	µg/kg wet	2.02	110	69-125
Perfluoro-1-hexanesulfonamide (FHxSA)	2.32	0.38	µg/kg wet	2.11	110	50-150
Perfluoro-1-butanefulfonamide (FBSA)	2.08	0.38	µg/kg wet	2.11	98.8	50-150
Perfluorohexanesulfonic acid (PFHxS)	1.97	0.38	µg/kg wet	1.92	103	67-130

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B294034 - SOP 465-PFAAS										
LCS (B294034-BS1)										
				Prepared: 11/04/21 Analyzed: 11/11/21						
Perfluoro-4-oxapentanoic acid (PFMPA)	2.50	0.38	µg/kg wet	2.11		118	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	2.35	0.38	µg/kg wet	2.11		111	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.39	0.38	µg/kg wet	2.00		119	64-140			
Perfluoropetanesulfonic acid (PFPeS)	2.05	0.38	µg/kg wet	1.98		103	73-123			
Perfluoroundecanoic acid (PFUnA)	2.12	0.38	µg/kg wet	2.11		100	64-136			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.48	0.38	µg/kg wet	2.11		117	50-150			
Perfluoroheptanoic acid (PFHpA)	2.24	0.38	µg/kg wet	2.11		106	71-131			
Perfluorooctanoic acid (PFOA)	2.29	0.38	µg/kg wet	2.11		109	69-133			
Perfluorooctanesulfonic acid (PFOS)	2.15	0.38	µg/kg wet	1.95		111	68-136			
Perfluorononanoic acid (PFNA)	2.22	0.38	µg/kg wet	2.11		105	72-129			
Matrix Spike (B294034-MS1)										
Source: 21J1956-01			Prepared: 11/04/21 Analyzed: 11/11/21							
Perfluorobutanoic acid (PFBA)	3.04	0.49	µg/kg dry	2.72	0.304	101	71-135			
Perfluorobutanesulfonic acid (PFBS)	2.65	0.49	µg/kg dry	2.40	0.0919	106	72-128			
Perfluoropentanoic acid (PFPeA)	2.99	0.49	µg/kg dry	2.72	0.299	98.9	69-132			
Perfluorohexanoic acid (PFHxA)	3.37	0.49	µg/kg dry	2.72	0.627	101	70-132			
11Cl-PF3OUdS (F53B Minor)	3.46	0.49	µg/kg dry	2.56	ND	135	50-150			
9Cl-PF3ONS (F53B Major)	3.41	0.49	µg/kg dry	2.54	ND	135	50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	2.60	0.49	µg/kg dry	2.56	ND	102	50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	3.52	0.49	µg/kg dry	2.72	ND	129	50-150			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	2.73	0.49	µg/kg dry	2.61	ND	105	65-137			
Perfluorodecanoic acid (PFDA)	2.82	0.49	µg/kg dry	2.72	ND	104	69-133			
Perfluorododecanoic acid (PFDoA)	2.85	0.49	µg/kg dry	2.72	ND	105	69-135			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	2.66	0.49	µg/kg dry	2.42	ND	110	50-150			
Perfluoroheptanesulfonic acid (PFHpS)	4.53	0.49	µg/kg dry	2.60	1.07	133 *	70-132			MS-12
N-EtFOSAA	3.09	0.49	µg/kg dry	2.72	ND	114	61-139			
N-MeFOSAA	3.06	0.49	µg/kg dry	2.72	ND	113	63-144			
Perfluorotetradecanoic acid (PFTA)	2.69	0.49	µg/kg dry	2.72	ND	98.9	69-133			
Perfluorotridecanoic acid (PFTrDA)	2.80	0.49	µg/kg dry	2.72	ND	103	66-139			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.79	0.49	µg/kg dry	2.55	ND	110	62-145			
Perfluorodecanesulfonic acid (PFDS)	3.16	0.49	µg/kg dry	2.62	ND	121	59-134			
Perfluorooctanesulfonamide (FOSA)	2.74	0.49	µg/kg dry	2.72	0.139	95.5	67-137			
Perfluorononanesulfonic acid (PFNS)	4.65	0.49	µg/kg dry	2.61	1.11	135 *	69-125			MS-12
Perfluoro-1-hexanesulfonamide (FHxSA)	4.39	0.49	µg/kg dry	2.72	1.44	108	50-150			
Perfluoro-1-butanesulfonamide (FBSA)	2.94	0.49	µg/kg dry	2.72	ND	108	50-150			
Perfluorohexanesulfonic acid (PFHxS)	7.96	0.49	µg/kg dry	2.48	4.81	127	67-130			
Perfluoro-4-oxapentanoic acid (PFMPA)	3.32	0.49	µg/kg dry	2.72	ND	122	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	2.96	0.49	µg/kg dry	2.72	ND	109	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.90	0.49	µg/kg dry	2.58	ND	112	64-140			
Perfluoropetanesulfonic acid (PFPeS)	2.79	0.49	µg/kg dry	2.56	0.128	104	73-123			
Perfluoroundecanoic acid (PFUnA)	2.89	0.49	µg/kg dry	2.72	ND	106	64-136			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	3.11	0.49	µg/kg dry	2.72	ND	114	50-150			
Perfluoroheptanoic acid (PFHpA)	3.00	0.49	µg/kg dry	2.72	0.145	105	71-131			
Perfluorooctanoic acid (PFOA)	3.70	0.49	µg/kg dry	2.72	0.716	110	69-133			
Perfluorooctanesulfonic acid (PFOS)	164	0.49	µg/kg dry	2.51	139	974 *	68-136			E, MS-19
Perfluorononanoic acid (PFNA)	2.84	0.49	µg/kg dry	2.72	ND	104	72-129			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B294034 - SOP 465-PFAAS

Matrix Spike Dup (B294034-MSD1)	Source: 21J1956-01			Prepared: 11/04/21 Analyzed: 11/11/21						
Perfluorobutanoic acid (PFBA)	3.07	0.49	µg/kg dry	2.73	0.304	102	71-135	1.15	30	
Perfluorobutanesulfonic acid (PFBS)	2.65	0.49	µg/kg dry	2.41	0.0919	106	72-128	0.152	30	
Perfluoropentanoic acid (PFPeA)	3.04	0.49	µg/kg dry	2.73	0.299	100	69-132	1.52	30	
Perfluorohexanoic acid (PFHxA)	3.33	0.49	µg/kg dry	2.73	0.627	99.3	70-132	0.941	30	
11Cl-PF3OUdS (F53B Minor)	3.63	0.49	µg/kg dry	2.57	ND	141	50-150	4.79	30	
9Cl-PF3ONS (F53B Major)	3.48	0.49	µg/kg dry	2.54	ND	137	50-150	1.97	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	2.72	0.49	µg/kg dry	2.57	ND	106	50-150	4.25	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	3.03	0.49	µg/kg dry	2.73	ND	111	50-150	15.0	30	
8:2 Fluorotelomersulfonic acid (8:2FTS A)	2.84	0.49	µg/kg dry	2.62	ND	109	65-137	4.03	30	
Perfluorodecanoic acid (PFDA)	2.75	0.49	µg/kg dry	2.73	ND	101	69-133	2.68	30	
Perfluorododecanoic acid (PFDoA)	2.73	0.49	µg/kg dry	2.73	ND	100	69-135	4.29	30	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	2.74	0.49	µg/kg dry	2.43	ND	113	50-150	2.83	30	
Perfluoroheptanesulfonic acid (PFHpS)	4.81	0.49	µg/kg dry	2.61	1.07	143	* 70-132	5.86	30	MS-12
N-EtFOSAA	3.40	0.49	µg/kg dry	2.73	ND	125	61-139	9.56	30	
N-MeFOSAA	3.26	0.49	µg/kg dry	2.73	ND	120	63-144	6.27	30	
Perfluorotetradecanoic acid (PFTA)	2.83	0.49	µg/kg dry	2.73	ND	104	69-133	5.04	30	
Perfluorotridecanoic acid (PFTrDA)	2.75	0.49	µg/kg dry	2.73	ND	101	66-139	1.93	30	
4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.86	0.49	µg/kg dry	2.55	ND	112	62-145	2.60	30	
Perfluorodecanesulfonic acid (PFDS)	3.29	0.49	µg/kg dry	2.63	ND	125	59-134	3.86	30	
Perfluorooctanesulfonamide (FOSA)	3.09	0.49	µg/kg dry	2.73	0.139	108	67-137	12.0	30	
Perfluorononanesulfonic acid (PFNS)	5.53	0.49	µg/kg dry	2.62	1.11	169	* 69-125	17.3	30	MS-12
Perfluoro-1-hexanesulfonamide (FHxSA)	5.00	0.49	µg/kg dry	2.73	1.44	130	50-150	13.0	30	
Perfluoro-1-butanesulfonamide (FBSA)	3.20	0.49	µg/kg dry	2.73	ND	117	50-150	8.48	30	
Perfluorohexanesulfonic acid (PFHxS)	7.53	0.49	µg/kg dry	2.48	4.81	110	67-130	5.60	30	
Perfluoro-4-oxapentanoic acid (PFMPA)	3.25	0.49	µg/kg dry	2.73	ND	119	50-150	2.06	30	
Perfluoro-5-oxahexanoic acid (PFMBA)	3.01	0.49	µg/kg dry	2.73	ND	110	50-150	1.70	30	
6:2 Fluorotelomersulfonic acid (6:2FTS A)	3.33	0.49	µg/kg dry	2.59	ND	129	64-140	13.8	30	
Perfluoropentanesulfonic acid (PFPeS)	2.79	0.49	µg/kg dry	2.56	0.128	104	73-123	0.104	30	
Perfluoroundecanoic acid (PFUnA)	2.67	0.49	µg/kg dry	2.73	ND	97.7	64-136	7.92	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	3.20	0.49	µg/kg dry	2.73	ND	117	50-150	2.81	30	
Perfluoroheptanoic acid (PFHpA)	3.00	0.49	µg/kg dry	2.73	0.145	105	71-131	0.0111	30	
Perfluorooctanoic acid (PFOA)	3.64	0.49	µg/kg dry	2.73	0.716	107	69-133	1.59	30	
Perfluorooctanesulfonic acid (PFOS)	192	0.49	µg/kg dry	2.52	139	2100	* 68-136	16.0	30	E, MS-19
Perfluorononanoic acid (PFNA)	2.88	0.49	µg/kg dry	2.73	ND	105	72-129	1.36	30	

Batch B294575 - SOP 465-PFAAS

Blank (B294575-BLK1)	Prepared: 11/13/21 Analyzed: 11/15/21									
Perfluorobutanoic acid (PFBA)	ND	0.39	µg/kg wet							
Perfluorobutanesulfonic acid (PFBS)	ND	0.39	µg/kg wet							
Perfluoropentanoic acid (PFPeA)	ND	0.39	µg/kg wet							
Perfluorohexanoic acid (PFHxA)	ND	0.39	µg/kg wet							
11Cl-PF3OUdS (F53B Minor)	ND	0.39	µg/kg wet							
9Cl-PF3ONS (F53B Major)	ND	0.39	µg/kg wet							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.39	µg/kg wet							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.39	µg/kg wet							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.39	µg/kg wet							
Perfluorodecanoic acid (PFDA)	ND	0.39	µg/kg wet							
Perfluorododecanoic acid (PFDoA)	ND	0.39	µg/kg wet							

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B294575 - SOP 465-PFAAS

Blank (B294575-BLK1)

Prepared: 11/13/21 Analyzed: 11/15/21

Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.39	µg/kg wet							
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.39	µg/kg wet							
N-EtFOSAA	ND	0.39	µg/kg wet							
N-MeFOSAA	ND	0.39	µg/kg wet							
Perfluorotetradecanoic acid (PFTA)	ND	0.39	µg/kg wet							
Perfluorotridecanoic acid (PFTrDA)	ND	0.39	µg/kg wet							
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.39	µg/kg wet							
Perfluorodecanesulfonic acid (PFDS)	ND	0.39	µg/kg wet							
Perfluorooctanesulfonamide (FOSA)	ND	0.39	µg/kg wet							
Perfluorononanesulfonic acid (PFNS)	ND	0.39	µg/kg wet							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.39	µg/kg wet							
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.39	µg/kg wet							
Perfluorohexanesulfonic acid (PFHxS)	ND	0.39	µg/kg wet							
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.39	µg/kg wet							
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.39	µg/kg wet							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.39	µg/kg wet							
Perfluoropentanesulfonic acid (PFPeS)	ND	0.39	µg/kg wet							
Perfluoroundecanoic acid (PFUnA)	ND	0.39	µg/kg wet							
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.39	µg/kg wet							
Perfluoroheptanoic acid (PFHpA)	ND	0.39	µg/kg wet							
Perfluorooctanoic acid (PFOA)	ND	0.39	µg/kg wet							
Perfluorooctanesulfonic acid (PFOS)	ND	0.39	µg/kg wet							
Perfluorononanoic acid (PFNA)	ND	0.39	µg/kg wet							

LCS (B294575-BS1)

Prepared: 11/13/21 Analyzed: 11/15/21

Perfluorobutanoic acid (PFBA)	2.25	0.38	µg/kg wet	2.14		105	71-135			
Perfluorobutanesulfonic acid (PFBS)	2.09	0.38	µg/kg wet	1.89		111	72-128			
Perfluoropentanoic acid (PFPeA)	2.31	0.38	µg/kg wet	2.14		108	69-132			
Perfluorohexanoic acid (PFHxA)	2.25	0.38	µg/kg wet	2.14		105	70-132			
11Cl-PF3OUdS (F53B Minor)	2.32	0.38	µg/kg wet	2.01		115	50-150			
9Cl-PF3ONS (F53B Major)	2.59	0.38	µg/kg wet	1.99		130	50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	2.15	0.38	µg/kg wet	2.01		107	50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	2.46	0.38	µg/kg wet	2.14		115	50-150			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	2.44	0.38	µg/kg wet	2.05		119	65-137			
Perfluorodecanoic acid (PFDA)	2.22	0.38	µg/kg wet	2.14		104	69-133			
Perfluorododecanoic acid (PFDoA)	2.44	0.38	µg/kg wet	2.14		114	69-135			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	2.22	0.38	µg/kg wet	1.90		117	50-150			
Perfluoroheptanesulfonic acid (PFHpS)	2.35	0.38	µg/kg wet	2.04		115	70-132			
N-EtFOSAA	2.77	0.38	µg/kg wet	2.14		129	61-139			
N-MeFOSAA	2.80	0.38	µg/kg wet	2.14		131	63-144			
Perfluorotetradecanoic acid (PFTA)	2.07	0.38	µg/kg wet	2.14		96.8	69-133			
Perfluorotridecanoic acid (PFTrDA)	2.13	0.38	µg/kg wet	2.14		99.7	66-139			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.20	0.38	µg/kg wet	2.00		110	62-145			
Perfluorodecanesulfonic acid (PFDS)	2.54	0.38	µg/kg wet	2.06		123	59-134			
Perfluorooctanesulfonamide (FOSA)	2.19	0.38	µg/kg wet	2.14		103	67-137			
Perfluorononanesulfonic acid (PFNS)	2.67	0.38	µg/kg wet	2.05		130	* 69-125			L-01
Perfluoro-1-hexanesulfonamide (FHxSA)	2.29	0.38	µg/kg wet	2.14		107	50-150			
Perfluoro-1-butanefulfonamide (FBSA)	2.42	0.38	µg/kg wet	2.14		113	50-150			
Perfluorohexanesulfonic acid (PFHxS)	1.96	0.38	µg/kg wet	1.94		101	67-130			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B294575 - SOP 465-PFAAS

LCS (B294575-BS1)

Prepared: 11/13/21 Analyzed: 11/15/21

Perfluoro-4-oxapentanoic acid (PFMPA)	2.40	0.38	µg/kg wet	2.14		113	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	2.28	0.38	µg/kg wet	2.14		107	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.55	0.38	µg/kg wet	2.03		126	64-140			
Perfluoropetanesulfonic acid (PFPeS)	1.95	0.38	µg/kg wet	2.01		97.4	73-123			
Perfluoroundecanoic acid (PFUnA)	2.10	0.38	µg/kg wet	2.14		98.1	64-136			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.40	0.38	µg/kg wet	2.14		113	50-150			
Perfluoroheptanoic acid (PFHpA)	2.28	0.38	µg/kg wet	2.14		107	71-131			
Perfluorooctanoic acid (PFOA)	2.28	0.38	µg/kg wet	2.14		107	69-133			
Perfluorooctanesulfonic acid (PFOS)	2.21	0.38	µg/kg wet	1.97		112	68-136			
Perfluorononanoic acid (PFNA)	2.26	0.38	µg/kg wet	2.14		106	72-129			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
E	Reported result is estimated. Value reported over verified calibration range.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
L-01	Laboratory fortified blank/laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.
MS-12	Matrix spike recovery and matrix spike duplicate recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogeneous sample aliquots cannot be eliminated.
MS-19	Sample to spike ratio is greater than or equal to 4:1. Spiked amount is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.
V-20	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Z-01	Sample prepared and extracted at a dilution.

ANALYST

STATION	PDF Management Station
JFC	James F. Constantino
JLH	Jessica L. Hoffman
EGR	Evet G Rivera
BLM	Brianna Henriquez
BAA	Bonita A. Abanulo
AP	Alan Pienkowski

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN S-2 (6-12) (21J1956-01)			Lab File ID: 21J1956-01.d			Analyzed: 11/11/21 15:24			
M8FOSA	415450.5	4.044517	451,140.00	4.044517	92	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	145884.8	2.595367	207,338.00	2.595367	70	50 - 150	0.0000	+/-0.50	
M2PFTA	1765899	4.378417	1,799,881.00	4.378417	98	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	196558.3	3.850917	225,194.00	3.850917	87	50 - 150	0.0000	+/-0.50	
MPFBA	704489.8	1.108317	819,390.00	1.108317	86	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	217213.5	2.921133	298,883.00	2.921133	73	50 - 150	0.0000	+/-0.50	
M6PFDA	1160200	3.851417	1,173,486.00	3.851417	99	50 - 150	0.0000	+/-0.50	
M3PFBS	169950	1.978033	190,139.00	1.978033	89	50 - 150	0.0000	+/-0.50	
M7PFUnA	1448302	4.001983	1,524,213.00	4.001983	95	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	101992	3.493333	131,267.00	3.493333	78	50 - 150	0.0000	+/-0.50	
M5PFPeA	716949.1	1.791367	823,921.00	1.791367	87	50 - 150	0.0000	+/-0.50	
M5PFHxA	999127.2	2.680533	1,131,820.00	2.680533	88	50 - 150	0.0000	+/-0.50	
M3PFHxS	124189.1	3.266817	141,124.00	3.266833	88	50 - 150	0.0000	+/-0.50	
M4PFHpA	1083605	3.2357	1,179,935.00	3.2357	92	50 - 150	0.0000	+/-0.50	
M8PFOA	1006676	3.51015	1,119,574.00	3.51015	90	50 - 150	0.0000	+/-0.50	
M8PFOS	124361.3	3.692083	163,358.00	3.692083	76	50 - 150	0.0000	+/-0.50	
M9PFNA	828808	3.693117	1,027,621.00	3.693117	81	50 - 150	0.0000	+/-0.50	
MPFDoA	1569319	4.136817	1,594,256.00	4.136817	98	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	301235	4.00145	294,893.00	4.001467	102	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	311927.8	3.929883	301,628.00	3.929883	103	50 - 150	0.0000	+/-0.50	
30MTN S-2 (6-12) (21J1956-01RE1)			Lab File ID: 21J1956-01RE1.d			Analyzed: 11/15/21 19:27			
M8PFOS	138816.3	3.724233	107,190.00	3.724233	130	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN S-3 (6-12) (21J1956-02)			Lab File ID: 21J1956-02.d			Analyzed: 11/11/21 15:31			
M8FOSA	456498.2	4.044517	451,140.00	4.044517	101	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	150110.6	2.595367	207,338.00	2.595367	72	50 - 150	0.0000	+/-0.50	
M2PFTA	1817019	4.378417	1,799,881.00	4.378417	101	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	216993.3	3.850917	225,194.00	3.850917	96	50 - 150	0.0000	+/-0.50	
MPFBA	758116.1	1.108317	819,390.00	1.108317	93	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	214014.1	2.921133	298,883.00	2.921133	72	50 - 150	0.0000	+/-0.50	
M6PFDA	1253159	3.851417	1,173,486.00	3.851417	107	50 - 150	0.0000	+/-0.50	
M3PFBS	189619.2	1.978033	190,139.00	1.978033	100	50 - 150	0.0000	+/-0.50	
M7PFUnA	1596747	3.993983	1,524,213.00	4.001983	105	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	113622.6	3.493333	131,267.00	3.493333	87	50 - 150	0.0000	+/-0.50	
M5PFPeA	778799.4	1.79965	823,921.00	1.791367	95	50 - 150	0.0083	+/-0.50	
M5PFHxA	1067295	2.680533	1,131,820.00	2.680533	94	50 - 150	0.0000	+/-0.50	
M3PFHxS	138182.3	3.266817	141,124.00	3.266833	98	50 - 150	0.0000	+/-0.50	
M4PFHpA	1139654	3.2357	1,179,935.00	3.2357	97	50 - 150	0.0000	+/-0.50	
M8PFOA	1093200	3.51015	1,119,574.00	3.51015	98	50 - 150	0.0000	+/-0.50	
M8PFOS	162576.2	3.692067	163,358.00	3.692083	100	50 - 150	0.0000	+/-0.50	
M9PFNA	1019251	3.693117	1,027,621.00	3.693117	99	50 - 150	0.0000	+/-0.50	
MPFDoA	1668007	4.136817	1,594,256.00	4.136817	105	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	295374.8	4.00145	294,893.00	4.001467	100	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	351843.4	3.929883	301,628.00	3.929883	117	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN S-3 (12-24) (21J1956-03)			Lab File ID: 21J1956-03.d			Analyzed: 11/11/21 15:38			
M8FOSA	416657.8	4.044517	451,140.00	4.044517	92	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	137646.8	2.595367	207,338.00	2.595367	66	50 - 150	0.0000	+/-0.50	
M2PFTA	1641660	4.378417	1,799,881.00	4.378417	91	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	193180.3	3.850917	225,194.00	3.850917	86	50 - 150	0.0000	+/-0.50	
MPFBA	715053.4	1.108317	819,390.00	1.108317	87	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	209441.5	2.921133	298,883.00	2.921133	70	50 - 150	0.0000	+/-0.50	
M6PFDA	1156621	3.851417	1,173,486.00	3.851417	99	50 - 150	0.0000	+/-0.50	
M3PFBS	173138.2	1.978033	190,139.00	1.978033	91	50 - 150	0.0000	+/-0.50	
M7PFUnA	1459275	4.001983	1,524,213.00	4.001983	96	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	95532.03	3.493333	131,267.00	3.493333	73	50 - 150	0.0000	+/-0.50	
M5PFPeA	733115	1.791367	823,921.00	1.791367	89	50 - 150	0.0000	+/-0.50	
M5PFHxA	1006593	2.680533	1,131,820.00	2.680533	89	50 - 150	0.0000	+/-0.50	
M3PFHxS	123586.8	3.266833	141,124.00	3.266833	88	50 - 150	0.0000	+/-0.50	
M4PFHpA	1081661	3.2357	1,179,935.00	3.2357	92	50 - 150	0.0000	+/-0.50	
M8PFOA	1053004	3.51015	1,119,574.00	3.51015	94	50 - 150	0.0000	+/-0.50	
M8PFOS	144161.7	3.692083	163,358.00	3.692083	88	50 - 150	0.0000	+/-0.50	
M9PFNA	917777	3.693117	1,027,621.00	3.693117	89	50 - 150	0.0000	+/-0.50	
MPFDoA	1491829	4.136817	1,594,256.00	4.136817	94	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	263686.1	4.00945	294,893.00	4.001467	89	50 - 150	0.0080	+/-0.50	
d3-NMeFOSAA	315633.6	3.929883	301,628.00	3.929883	105	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN S-4 (6-12) (21J1956-04)									
			Lab File ID: 21J1956-04.d			Analyzed: 11/11/21 15:45			
M8FOSA	440295.4	4.044517	451,140.00	4.044517	98	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	141814	2.595367	207,338.00	2.595367	68	50 - 150	0.0000	+/-0.50	
M2PFTA	1792580	4.378417	1,799,881.00	4.378417	100	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	255582	3.850917	225,194.00	3.850917	113	50 - 150	0.0000	+/-0.50	
MPFBA	737994.4	1.108317	819,390.00	1.108317	90	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	201444.7	2.921133	298,883.00	2.921133	67	50 - 150	0.0000	+/-0.50	
M6PFDA	1181192	3.851417	1,173,486.00	3.851417	101	50 - 150	0.0000	+/-0.50	
M3PFBS	180805.1	1.978033	190,139.00	1.978033	95	50 - 150	0.0000	+/-0.50	
M7PFUnA	1554364	3.993983	1,524,213.00	4.001983	102	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	123610.6	3.493333	131,267.00	3.493333	94	50 - 150	0.0000	+/-0.50	
M5PFPeA	753394.3	1.791367	823,921.00	1.791367	91	50 - 150	0.0000	+/-0.50	
M5PFHxA	1051087	2.680533	1,131,820.00	2.680533	93	50 - 150	0.0000	+/-0.50	
M3PFHxS	133049.9	3.266817	141,124.00	3.266833	94	50 - 150	0.0000	+/-0.50	
M4PFHpA	1113059	3.2357	1,179,935.00	3.2357	94	50 - 150	0.0000	+/-0.50	
M8PFOA	1097000	3.51015	1,119,574.00	3.51015	98	50 - 150	0.0000	+/-0.50	
M8PFOS	137872	3.692083	163,358.00	3.692083	84	50 - 150	0.0000	+/-0.50	
M9PFNA	915142.1	3.693117	1,027,621.00	3.693117	89	50 - 150	0.0000	+/-0.50	
MPFDoA	1613275	4.136817	1,594,256.00	4.136817	101	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	308803.1	4.00145	294,893.00	4.001467	105	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	373653.4	3.929883	301,628.00	3.929883	124	50 - 150	0.0000	+/-0.50	
30MTN S-4 (6-12) (21J1956-04RE1)									
			Lab File ID: 21J1956-04RE1.d			Analyzed: 11/15/21 19:34			
M8PFOS	151927.2	3.724233	107,190.00	3.724233	142	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN S-5 (6-12) (21J1956-05)			Lab File ID: 21J1956-05.d			Analyzed: 11/11/21 15:52			
M8FOSA	451579	4.044517	451,140.00	4.044517	100	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	153630.5	2.58715	207,338.00	2.595367	74	50 - 150	-0.0082	+/-0.50	
M2PFTA	1924894	4.378417	1,799,881.00	4.378417	107	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	209638.6	3.850917	225,194.00	3.850917	93	50 - 150	0.0000	+/-0.50	
MPFBA	763819.3	1.108317	819,390.00	1.108317	93	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	222768.5	2.91295	298,883.00	2.921133	75	50 - 150	-0.0082	+/-0.50	
M6PFDA	1242337	3.851417	1,173,486.00	3.851417	106	50 - 150	0.0000	+/-0.50	
M3PFBS	181628	1.978033	190,139.00	1.978033	96	50 - 150	0.0000	+/-0.50	
M7PFUnA	1542788	3.993983	1,524,213.00	4.001983	101	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	117893.8	3.493333	131,267.00	3.493333	90	50 - 150	0.0000	+/-0.50	
M5PFPeA	772919.9	1.791367	823,921.00	1.791367	94	50 - 150	0.0000	+/-0.50	
M5PFHxA	1055756	2.680533	1,131,820.00	2.680533	93	50 - 150	0.0000	+/-0.50	
M3PFHxS	129789.4	3.266817	141,124.00	3.266833	92	50 - 150	0.0000	+/-0.50	
M4PFHpA	1134888	3.2357	1,179,935.00	3.2357	96	50 - 150	0.0000	+/-0.50	
M8PFOA	1059798	3.51015	1,119,574.00	3.51015	95	50 - 150	0.0000	+/-0.50	
M8PFOS	158298.6	3.692083	163,358.00	3.692083	97	50 - 150	0.0000	+/-0.50	
M9PFNA	956605.8	3.693117	1,027,621.00	3.693117	93	50 - 150	0.0000	+/-0.50	
MPFDoA	1629817	4.136817	1,594,256.00	4.136817	102	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	291424.8	4.00145	294,893.00	4.001467	99	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	352890.3	3.921883	301,628.00	3.929883	117	50 - 150	-0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN S-5 (12-24) (21J1956-06)			Lab File ID: 21J1956-06.d			Analyzed: 11/11/21 16:00			
M8FOSA	287537.8	4.044517	451,140.00	4.044517	64	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	138771	2.58715	207,338.00	2.595367	67	50 - 150	-0.0082	+/-0.50	
M2PFTA	1350933	4.378417	1,799,881.00	4.378417	75	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	150101.9	3.850917	225,194.00	3.850917	67	50 - 150	0.0000	+/-0.50	
MPFBA	670404.7	1.108317	819,390.00	1.108317	82	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	204534.6	2.91295	298,883.00	2.921133	68	50 - 150	-0.0082	+/-0.50	
M6PFDA	831027.1	3.851417	1,173,486.00	3.851417	71	50 - 150	0.0000	+/-0.50	
M3PFBS	158484.5	1.978033	190,139.00	1.978033	83	50 - 150	0.0000	+/-0.50	
M7PFUnA	1071125	3.993983	1,524,213.00	4.001983	70	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	92216.35	3.493333	131,267.00	3.493333	70	50 - 150	0.0000	+/-0.50	
M5PFPeA	669325.7	1.791367	823,921.00	1.791367	81	50 - 150	0.0000	+/-0.50	
M5PFHxA	903018.3	2.680533	1,131,820.00	2.680533	80	50 - 150	0.0000	+/-0.50	
M3PFHxS	110180.4	3.266817	141,124.00	3.266833	78	50 - 150	0.0000	+/-0.50	
M4PFHpA	948351.9	3.2357	1,179,935.00	3.2357	80	50 - 150	0.0000	+/-0.50	
M8PFOA	892220.4	3.51015	1,119,574.00	3.51015	80	50 - 150	0.0000	+/-0.50	
M8PFOS	116157.8	3.692067	163,358.00	3.692083	71	50 - 150	0.0000	+/-0.50	
M9PFNA	774726.6	3.693117	1,027,621.00	3.693117	75	50 - 150	0.0000	+/-0.50	
MPFDoA	1122326	4.136817	1,594,256.00	4.136817	70	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	207798.1	4.00145	294,893.00	4.001467	70	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	245552.5	3.929883	301,628.00	3.929883	81	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN S-7 (0-12) (21J1956-07)			Lab File ID: 21J1956-07.d			Analyzed: 11/11/21 16:07			
M8FOSA	434699	4.044517	451,140.00	4.044517	96	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	149308.5	2.58715	207,338.00	2.595367	72	50 - 150	-0.0082	+/-0.50	
M2PFTA	1942827	4.378417	1,799,881.00	4.378417	108	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	290051	3.850917	225,194.00	3.850917	129	50 - 150	0.0000	+/-0.50	
MPFBA	745684.8	1.108317	819,390.00	1.108317	91	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	204561.5	2.91295	298,883.00	2.921133	68	50 - 150	-0.0082	+/-0.50	
M6PFDA	1241244	3.851417	1,173,486.00	3.851417	106	50 - 150	0.0000	+/-0.50	
M3PFBS	178342.5	1.978033	190,139.00	1.978033	94	50 - 150	0.0000	+/-0.50	
M7PFUnA	1402648	3.993983	1,524,213.00	4.001983	92	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	142808.6	3.493333	131,267.00	3.493333	109	50 - 150	0.0000	+/-0.50	
M5PFPeA	763302.2	1.791367	823,921.00	1.791367	93	50 - 150	0.0000	+/-0.50	
M5PFHxA	1051059	2.680533	1,131,820.00	2.680533	93	50 - 150	0.0000	+/-0.50	
M3PFHxS	128630.9	3.266817	141,124.00	3.266833	91	50 - 150	0.0000	+/-0.50	
M4PFHpA	1113492	3.2357	1,179,935.00	3.2357	94	50 - 150	0.0000	+/-0.50	
M8PFOA	1074125	3.51015	1,119,574.00	3.51015	96	50 - 150	0.0000	+/-0.50	
M8PFOS	152666.5	3.692083	163,358.00	3.692083	93	50 - 150	0.0000	+/-0.50	
M9PFNA	979508.9	3.693117	1,027,621.00	3.693117	95	50 - 150	0.0000	+/-0.50	
MPFDoA	1707174	4.136817	1,594,256.00	4.136817	107	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	306534.7	4.001467	294,893.00	4.001467	104	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	369695.6	3.929883	301,628.00	3.929883	123	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN S-8 (0-12) (21J1956-08)			Lab File ID: 21J1956-08.d		Analyzed: 11/11/21 16:14				
M8FOSA	452869.5	4.044517	451,140.00	4.044517	100	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	169625.4	2.58715	207,338.00	2.595367	82	50 - 150	-0.0082	+/-0.50	
M2PFTA	1882826	4.378417	1,799,881.00	4.378417	105	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	207430.7	3.850917	225,194.00	3.850917	92	50 - 150	0.0000	+/-0.50	
MPFBA	778681.9	1.108317	819,390.00	1.108317	95	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	223090.1	2.91295	298,883.00	2.921133	75	50 - 150	-0.0082	+/-0.50	
M6PFDA	1187181	3.851417	1,173,486.00	3.851417	101	50 - 150	0.0000	+/-0.50	
M3PFBS	184202.4	1.978033	190,139.00	1.978033	97	50 - 150	0.0000	+/-0.50	
M7PFUnA	1595081	3.993983	1,524,213.00	4.001983	105	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	114861.2	3.493333	131,267.00	3.493333	88	50 - 150	0.0000	+/-0.50	
M5PFPeA	797696.8	1.791367	823,921.00	1.791367	97	50 - 150	0.0000	+/-0.50	
M5PFHxA	1087548	2.672333	1,131,820.00	2.680533	96	50 - 150	-0.0082	+/-0.50	
M3PFHxS	136285.6	3.266817	141,124.00	3.266833	97	50 - 150	0.0000	+/-0.50	
M4PFHpA	1184553	3.2357	1,179,935.00	3.2357	100	50 - 150	0.0000	+/-0.50	
M8PFOA	1139350	3.50185	1,119,574.00	3.51015	102	50 - 150	-0.0083	+/-0.50	
M8PFOS	167053.5	3.692083	163,358.00	3.692083	102	50 - 150	0.0000	+/-0.50	
M9PFNA	999862.1	3.693117	1,027,621.00	3.693117	97	50 - 150	0.0000	+/-0.50	
MPFDoA	1593691	4.136817	1,594,256.00	4.136817	100	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	297800.4	4.00145	294,893.00	4.001467	101	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	331655.8	3.921883	301,628.00	3.929883	110	50 - 150	-0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN S-9 (0-12) (21J1956-09)			Lab File ID: 21J1956-09.d			Analyzed: 11/11/21 16:21			
M8FOSA	457592.3	4.044517	451,140.00	4.044517	101	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	158003.9	2.58715	207,338.00	2.595367	76	50 - 150	-0.0082	+/-0.50	
M2PFtA	1893230	4.378417	1,799,881.00	4.378417	105	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	281423.1	3.850917	225,194.00	3.850917	125	50 - 150	0.0000	+/-0.50	
MPFBA	778215.4	1.108317	819,390.00	1.108317	95	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	222433.6	2.91295	298,883.00	2.921133	74	50 - 150	-0.0082	+/-0.50	
M6PFDA	1268586	3.851417	1,173,486.00	3.851417	108	50 - 150	0.0000	+/-0.50	
M3PFBS	186641	1.978033	190,139.00	1.978033	98	50 - 150	0.0000	+/-0.50	
M7PFUnA	1685547	3.993983	1,524,213.00	4.001983	111	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	143096.3	3.493333	131,267.00	3.493333	109	50 - 150	0.0000	+/-0.50	
M5PFPeA	776831.1	1.791367	823,921.00	1.791367	94	50 - 150	0.0000	+/-0.50	
M5PFHxA	1080840	2.672333	1,131,820.00	2.680533	95	50 - 150	-0.0082	+/-0.50	
M3PFHxS	134908.3	3.266817	141,124.00	3.266833	96	50 - 150	0.0000	+/-0.50	
M4PFHpA	1166831	3.2357	1,179,935.00	3.2357	99	50 - 150	0.0000	+/-0.50	
M8PFOA	1129818	3.51015	1,119,574.00	3.51015	101	50 - 150	0.0000	+/-0.50	
M8PFOS	158465.9	3.692083	163,358.00	3.692083	97	50 - 150	0.0000	+/-0.50	
M9PFNA	1013504	3.693117	1,027,621.00	3.693117	99	50 - 150	0.0000	+/-0.50	
MPFDoA	1651222	4.136817	1,594,256.00	4.136817	104	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	340185.3	4.00145	294,893.00	4.001467	115	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	365387.1	3.921883	301,628.00	3.929883	121	50 - 150	-0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN S-10 (0-12) (21J1956-10)			Lab File ID: 21J1956-10.d			Analyzed: 11/11/21 16:30			
M8FOSA	444256.4	4.044517	451,140.00	4.044517	98	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	143959.5	2.58715	207,338.00	2.595367	69	50 - 150	-0.0082	+/-0.50	
M2PFtA	1687429	4.378417	1,799,881.00	4.378417	94	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	255319.8	3.850917	225,194.00	3.850917	113	50 - 150	0.0000	+/-0.50	
MpFBA	723158.9	1.108317	819,390.00	1.108317	88	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	190038.5	2.91295	298,883.00	2.921133	64	50 - 150	-0.0082	+/-0.50	
M6PFDA	1080507	3.851417	1,173,486.00	3.851417	92	50 - 150	0.0000	+/-0.50	
M3PFBS	172943.4	1.978033	190,139.00	1.978033	91	50 - 150	0.0000	+/-0.50	
M7PFUnA	1487604	3.993983	1,524,213.00	4.001983	98	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	122677.9	3.493333	131,267.00	3.493333	93	50 - 150	0.0000	+/-0.50	
M5PFPeA	725785.3	1.791367	823,921.00	1.791367	88	50 - 150	0.0000	+/-0.50	
M5PFHxA	990742.4	2.680533	1,131,820.00	2.680533	88	50 - 150	0.0000	+/-0.50	
M3PFHxS	131245.5	3.266817	141,124.00	3.266833	93	50 - 150	0.0000	+/-0.50	
M4PFHpA	1073237	3.2357	1,179,935.00	3.2357	91	50 - 150	0.0000	+/-0.50	
M8PFOA	1033049	3.51015	1,119,574.00	3.51015	92	50 - 150	0.0000	+/-0.50	
M8PFOS	133980.1	3.692083	163,358.00	3.692083	82	50 - 150	0.0000	+/-0.50	
M9PFNA	895052.7	3.693117	1,027,621.00	3.693117	87	50 - 150	0.0000	+/-0.50	
MpFDoA	1560235	4.136817	1,594,256.00	4.136817	98	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	295216.7	4.00145	294,893.00	4.001467	100	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	353628.2	3.929883	301,628.00	3.929883	117	50 - 150	0.0000	+/-0.50	
30MTN S-10 (0-12) (21J1956-10RE1)			Lab File ID: 21J1956-10RE1.d			Analyzed: 11/15/21 19:41			
M8PFOS	151729.8	3.724217	107,190.00	3.724233	142	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN S-11 (0-12) (21J1956-11)			Lab File ID: 21J1956-11.d		Analyzed: 11/11/21 16:45				
M8FOSA	484106.3	4.044517	451,140.00	4.044517	107	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	160698.3	2.58715	207,338.00	2.58715	78	50 - 150	0.0000	+/-0.50	
M2PFtA	1971387	4.378417	1,799,881.00	4.378417	110	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	251997.7	3.850917	225,194.00	3.850917	112	50 - 150	0.0000	+/-0.50	
MPFBA	784776.8	1.108317	819,390.00	1.108317	96	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	224183.5	2.91295	298,883.00	2.91295	75	50 - 150	0.0000	+/-0.50	
M6PFDA	1285171	3.851417	1,173,486.00	3.851417	110	50 - 150	0.0000	+/-0.50	
M3PFBS	189545.7	1.978033	190,139.00	1.978033	100	50 - 150	0.0000	+/-0.50	
M7PFUnA	1593984	3.993983	1,524,213.00	3.993983	105	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	133931.1	3.493333	131,267.00	3.493333	102	50 - 150	0.0000	+/-0.50	
M5PFPeA	800354	1.791367	823,921.00	1.791367	97	50 - 150	0.0000	+/-0.50	
M5PFHxA	1092588	2.672333	1,131,820.00	2.672333	97	50 - 150	0.0000	+/-0.50	
M3PFHxS	146323.1	3.266817	141,124.00	3.266833	104	50 - 150	0.0000	+/-0.50	
M4PFHpA	1183194	3.2357	1,179,935.00	3.2357	100	50 - 150	0.0000	+/-0.50	
M8PFOA	1167697	3.50185	1,119,574.00	3.51015	104	50 - 150	-0.0083	+/-0.50	
M8PFOS	160631.8	3.692067	163,358.00	3.692083	98	50 - 150	0.0000	+/-0.50	
M9PFNA	1057855	3.693117	1,027,621.00	3.693117	103	50 - 150	0.0000	+/-0.50	
MPFDoA	1685170	4.136817	1,594,256.00	4.136817	106	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	337675.2	4.00145	294,893.00	4.001467	115	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	365024.8	3.921883	301,628.00	3.921883	121	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN S-11 (24-36) (21J1956-12)			Lab File ID: 21J1956-12.d			Analyzed: 11/11/21 16:52			
M8FOSA	485829.4	4.044517	451,140.00	4.044517	108	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	199306.3	2.57895	207,338.00	2.58715	96	50 - 150	-0.0082	+/-0.50	
M2PFTA	1909308	4.378417	1,799,881.00	4.378417	106	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	242830.8	3.850917	225,194.00	3.850917	108	50 - 150	0.0000	+/-0.50	
MPFBA	848698.1	1.108317	819,390.00	1.108317	104	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	223907	2.91295	298,883.00	2.91295	75	50 - 150	0.0000	+/-0.50	
M6PFDA	1260048	3.851417	1,173,486.00	3.851417	107	50 - 150	0.0000	+/-0.50	
M3PFBS	192714.3	1.969733	190,139.00	1.978033	101	50 - 150	-0.0083	+/-0.50	
M7PFUnA	1560199	3.993983	1,524,213.00	3.993983	102	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	125740.3	3.493333	131,267.00	3.493333	96	50 - 150	0.0000	+/-0.50	
M5PFPeA	836041.4	1.7826	823,921.00	1.791367	101	50 - 150	-0.0088	+/-0.50	
M5PFHxA	1137439	2.672333	1,131,820.00	2.672333	100	50 - 150	0.0000	+/-0.50	
M3PFHxS	151340.4	3.266817	141,124.00	3.266833	107	50 - 150	0.0000	+/-0.50	
M4PFHpA	1254696	3.2357	1,179,935.00	3.2357	106	50 - 150	0.0000	+/-0.50	
M8PFOA	1146112	3.50185	1,119,574.00	3.51015	102	50 - 150	-0.0083	+/-0.50	
M8PFOS	173557.9	3.692083	163,358.00	3.692083	106	50 - 150	0.0000	+/-0.50	
M9PFNA	1036416	3.693117	1,027,621.00	3.693117	101	50 - 150	0.0000	+/-0.50	
MPFDoA	1717631	4.136817	1,594,256.00	4.136817	108	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	299203.5	4.00145	294,893.00	4.001467	101	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	297533.9	3.921883	301,628.00	3.921883	99	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN S-12 (0-12) (21J1956-13)			Lab File ID: 21J1956-13.d			Analyzed: 11/11/21 16:59			
M8FOSA	474639.7	4.044517	451,140.00	4.044517	105	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	172621.5	2.58715	207,338.00	2.58715	83	50 - 150	0.0000	+/-0.50	
M2PFtA	1962283	4.378417	1,799,881.00	4.378417	109	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	223141.1	3.850917	225,194.00	3.850917	99	50 - 150	0.0000	+/-0.50	
MPFBA	789705.6	1.108317	819,390.00	1.108317	96	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	229325.6	2.91295	298,883.00	2.91295	77	50 - 150	0.0000	+/-0.50	
M6PFDA	1214168	3.851417	1,173,486.00	3.851417	103	50 - 150	0.0000	+/-0.50	
M3PFBS	186103	1.969733	190,139.00	1.978033	98	50 - 150	-0.0083	+/-0.50	
M7PFUnA	1560272	3.993983	1,524,213.00	3.993983	102	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	111057.8	3.493333	131,267.00	3.493333	85	50 - 150	0.0000	+/-0.50	
M5PFPeA	791536.8	1.791367	823,921.00	1.791367	96	50 - 150	0.0000	+/-0.50	
M5PFHxA	1111418	2.672333	1,131,820.00	2.672333	98	50 - 150	0.0000	+/-0.50	
M3PFHxS	141970	3.266833	141,124.00	3.266833	101	50 - 150	0.0000	+/-0.50	
M4PFHpA	1170156	3.2357	1,179,935.00	3.2357	99	50 - 150	0.0000	+/-0.50	
M8PFOA	1152937	3.50185	1,119,574.00	3.51015	103	50 - 150	-0.0083	+/-0.50	
M8PFOS	162945.1	3.692083	163,358.00	3.692083	100	50 - 150	0.0000	+/-0.50	
M9PFNA	991292.8	3.693117	1,027,621.00	3.693117	96	50 - 150	0.0000	+/-0.50	
MPFDoA	1632505	4.136817	1,594,256.00	4.136817	102	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	290320.7	4.00145	294,893.00	4.001467	98	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	338655.1	3.921883	301,628.00	3.921883	112	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN S-12 (12-24) (21J1956-14)			Lab File ID: 21J1956-14.d			Analyzed: 11/11/21 17:06			
M8FOSA	376337.6	4.044517	451,140.00	4.044517	83	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	152982.1	2.58715	207,338.00	2.58715	74	50 - 150	0.0000	+/-0.50	
M2PFTA	1525280	4.378417	1,799,881.00	4.378417	85	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	176625.6	3.850917	225,194.00	3.850917	78	50 - 150	0.0000	+/-0.50	
MPFBA	665674.9	1.108317	819,390.00	1.108317	81	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	194341.9	2.91295	298,883.00	2.91295	65	50 - 150	0.0000	+/-0.50	
M6PFDA	1059624	3.851417	1,173,486.00	3.851417	90	50 - 150	0.0000	+/-0.50	
M3PFBS	156145.3	1.978033	190,139.00	1.978033	82	50 - 150	0.0000	+/-0.50	
M7PFUnA	1298792	3.993983	1,524,213.00	3.993983	85	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	95855.3	3.493333	131,267.00	3.493333	73	50 - 150	0.0000	+/-0.50	
M5PFPeA	675211.3	1.791367	823,921.00	1.791367	82	50 - 150	0.0000	+/-0.50	
M5PFHxA	923184.7	2.672333	1,131,820.00	2.672333	82	50 - 150	0.0000	+/-0.50	
M3PFHxS	115656.3	3.266817	141,124.00	3.266833	82	50 - 150	0.0000	+/-0.50	
M4PFHpA	982914.6	3.2357	1,179,935.00	3.2357	83	50 - 150	0.0000	+/-0.50	
M8PFOA	968013.9	3.50185	1,119,574.00	3.51015	86	50 - 150	-0.0083	+/-0.50	
M8PFOS	133501.6	3.692083	163,358.00	3.692083	82	50 - 150	0.0000	+/-0.50	
M9PFNA	868888.7	3.693117	1,027,621.00	3.693117	85	50 - 150	0.0000	+/-0.50	
MPFDoA	1390873	4.136817	1,594,256.00	4.136817	87	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	258302.5	4.001467	294,893.00	4.001467	88	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	284678.4	3.921883	301,628.00	3.921883	94	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN S-13 (0-12) (21J1956-15)			Lab File ID: 21J1956-15.d			Analyzed: 11/11/21 17:13			
M8FOSA	447881.1	4.044517	451,140.00	4.044517	99	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	158854.9	2.58715	207,338.00	2.58715	77	50 - 150	0.0000	+/-0.50	
M2PFTA	1813499	4.378417	1,799,881.00	4.378417	101	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	249929.5	3.850917	225,194.00	3.850917	111	50 - 150	0.0000	+/-0.50	
MPFBA	765402.7	1.108317	819,390.00	1.108317	93	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	215408.5	2.91295	298,883.00	2.91295	72	50 - 150	0.0000	+/-0.50	
M6PFDA	1204123	3.851417	1,173,486.00	3.851417	103	50 - 150	0.0000	+/-0.50	
M3PFBS	176969.3	1.978033	190,139.00	1.978033	93	50 - 150	0.0000	+/-0.50	
M7PFUnA	1544081	3.993983	1,524,213.00	3.993983	101	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	118577	3.493333	131,267.00	3.493333	90	50 - 150	0.0000	+/-0.50	
M5PFPeA	767590.3	1.791367	823,921.00	1.791367	93	50 - 150	0.0000	+/-0.50	
M5PFHxA	1063232	2.672333	1,131,820.00	2.672333	94	50 - 150	0.0000	+/-0.50	
M3PFHxS	128939.2	3.266833	141,124.00	3.266833	91	50 - 150	0.0000	+/-0.50	
M4PFHpA	1135352	3.2357	1,179,935.00	3.2357	96	50 - 150	0.0000	+/-0.50	
M8PFOA	1110336	3.51015	1,119,574.00	3.51015	99	50 - 150	0.0000	+/-0.50	
M8PFOS	158902.4	3.692083	163,358.00	3.692083	97	50 - 150	0.0000	+/-0.50	
M9PFNA	970401.9	3.693117	1,027,621.00	3.693117	94	50 - 150	0.0000	+/-0.50	
MPFDoA	1650126	4.136817	1,594,256.00	4.136817	104	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	296944.2	4.001467	294,893.00	4.001467	101	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	352456	3.921883	301,628.00	3.921883	117	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN S-13 (12-24) (21J1956-16)			Lab File ID: 21J1956-16.d			Analyzed: 11/11/21 17:21			
M8FOSA	453776.7	4.044517	451,140.00	4.044517	101	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	164364.4	2.58715	207,338.00	2.58715	79	50 - 150	0.0000	+/-0.50	
M2PFTA	1827202	4.378417	1,799,881.00	4.378417	102	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	221423	3.850917	225,194.00	3.850917	98	50 - 150	0.0000	+/-0.50	
MPFBA	754889.3	1.108317	819,390.00	1.108317	92	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	215397.9	2.91295	298,883.00	2.91295	72	50 - 150	0.0000	+/-0.50	
M6PFDA	1157172	3.851417	1,173,486.00	3.851417	99	50 - 150	0.0000	+/-0.50	
M3PFBS	175004.9	1.969733	190,139.00	1.978033	92	50 - 150	-0.0083	+/-0.50	
M7PFUnA	1578703	3.993983	1,524,213.00	3.993983	104	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	111356.4	3.493333	131,267.00	3.493333	85	50 - 150	0.0000	+/-0.50	
M5PFPeA	758558.1	1.791367	823,921.00	1.791367	92	50 - 150	0.0000	+/-0.50	
M5PFHxA	1037150	2.672333	1,131,820.00	2.672333	92	50 - 150	0.0000	+/-0.50	
M3PFHxS	129651.5	3.266817	141,124.00	3.266833	92	50 - 150	0.0000	+/-0.50	
M4PFHpA	1084472	3.2357	1,179,935.00	3.2357	92	50 - 150	0.0000	+/-0.50	
M8PFOA	1060088	3.51015	1,119,574.00	3.51015	95	50 - 150	0.0000	+/-0.50	
M8PFOS	147923.8	3.692083	163,358.00	3.692083	91	50 - 150	0.0000	+/-0.50	
M9PFNA	977544.9	3.693117	1,027,621.00	3.693117	95	50 - 150	0.0000	+/-0.50	
MPFDoA	1555779	4.136817	1,594,256.00	4.136817	98	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	289618.5	4.00145	294,893.00	4.001467	98	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	347614.4	3.921883	301,628.00	3.921883	115	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN S-14 (0-12) (21J1956-17)			Lab File ID: 21J1956-17.d			Analyzed: 11/11/21 17:28			
M8FOSA	455708.5	4.044517	451,140.00	4.044517	101	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	160635	2.58715	207,338.00	2.58715	77	50 - 150	0.0000	+/-0.50	
M2PFTA	1953845	4.378417	1,799,881.00	4.378417	109	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	276181	3.850917	225,194.00	3.850917	123	50 - 150	0.0000	+/-0.50	
MPFBA	754950.8	1.108317	819,390.00	1.108317	92	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	209121.6	2.91295	298,883.00	2.91295	70	50 - 150	0.0000	+/-0.50	
M6PFDA	1225988	3.851417	1,173,486.00	3.851417	104	50 - 150	0.0000	+/-0.50	
M3PFBS	183708.5	1.969733	190,139.00	1.978033	97	50 - 150	-0.0083	+/-0.50	
M7PFUnA	1571886	3.993983	1,524,213.00	3.993983	103	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	131856.6	3.493333	131,267.00	3.493333	100	50 - 150	0.0000	+/-0.50	
M5PFPeA	768699.4	1.791367	823,921.00	1.791367	93	50 - 150	0.0000	+/-0.50	
M5PFHxA	1057576	2.672333	1,131,820.00	2.672333	93	50 - 150	0.0000	+/-0.50	
M3PFHxS	134451.5	3.266817	141,124.00	3.266833	95	50 - 150	0.0000	+/-0.50	
M4PFHpA	1141337	3.2357	1,179,935.00	3.2357	97	50 - 150	0.0000	+/-0.50	
M8PFOA	1102608	3.50185	1,119,574.00	3.51015	98	50 - 150	-0.0083	+/-0.50	
M8PFOS	162612.5	3.692067	163,358.00	3.692083	100	50 - 150	0.0000	+/-0.50	
M9PFNA	1007498	3.693117	1,027,621.00	3.693117	98	50 - 150	0.0000	+/-0.50	
MPFDoA	1726254	4.136817	1,594,256.00	4.136817	108	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	356750.1	4.00145	294,893.00	4.001467	121	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	375912.1	3.921883	301,628.00	3.921883	125	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN S-14 (12-24) (21J1956-18)			Lab File ID: 21J1956-18.d			Analyzed: 11/11/21 17:35			
M8FOSA	442097.5	4.044517	451,140.00	4.044517	98	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	164635.4	2.58715	207,338.00	2.58715	79	50 - 150	0.0000	+/-0.50	
M2PFTA	2016438	4.378417	1,799,881.00	4.378417	112	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	246189.3	3.850917	225,194.00	3.850917	109	50 - 150	0.0000	+/-0.50	
MPFBA	765061.5	1.108317	819,390.00	1.108317	93	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	218974.1	2.91295	298,883.00	2.91295	73	50 - 150	0.0000	+/-0.50	
M6PFDA	1211749	3.851417	1,173,486.00	3.851417	103	50 - 150	0.0000	+/-0.50	
M3PFBS	186377.3	1.969733	190,139.00	1.978033	98	50 - 150	-0.0083	+/-0.50	
M7PFUnA	1630879	3.993983	1,524,213.00	3.993983	107	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	127310.5	3.493333	131,267.00	3.493333	97	50 - 150	0.0000	+/-0.50	
M5PFPeA	767096.2	1.791367	823,921.00	1.791367	93	50 - 150	0.0000	+/-0.50	
M5PFHxA	1068973	2.672333	1,131,820.00	2.672333	94	50 - 150	0.0000	+/-0.50	
M3PFHxS	136860.4	3.266817	141,124.00	3.266833	97	50 - 150	0.0000	+/-0.50	
M4PFHpA	1109537	3.2357	1,179,935.00	3.2357	94	50 - 150	0.0000	+/-0.50	
M8PFOA	1117500	3.50185	1,119,574.00	3.51015	100	50 - 150	-0.0083	+/-0.50	
M8PFOS	157215.6	3.692083	163,358.00	3.692083	96	50 - 150	0.0000	+/-0.50	
M9PFNA	981029.1	3.693117	1,027,621.00	3.693117	95	50 - 150	0.0000	+/-0.50	
MPFDoA	1680807	4.136817	1,594,256.00	4.136817	105	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	316662.5	4.00145	294,893.00	4.001467	107	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	360221.2	3.921883	301,628.00	3.921883	119	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN S-15 (0-12) (21J1956-19)			Lab File ID: 21J1956-19.d		Analyzed: 11/11/21 17:42				
M8FOSA	491143.2	4.044517	451,140.00	4.044517	109	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	167867.9	2.58715	207,338.00	2.58715	81	50 - 150	0.0000	+/-0.50	
M2PFTA	2039513	4.370283	1,799,881.00	4.378417	113	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	286102	3.850917	225,194.00	3.850917	127	50 - 150	0.0000	+/-0.50	
MPFBA	813975.9	1.108317	819,390.00	1.108317	99	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	227946.1	2.91295	298,883.00	2.91295	76	50 - 150	0.0000	+/-0.50	
M6PFDA	1285802	3.851417	1,173,486.00	3.851417	110	50 - 150	0.0000	+/-0.50	
M3PFBS	195855	1.969733	190,139.00	1.978033	103	50 - 150	-0.0083	+/-0.50	
M7PFUnA	1686694	3.993983	1,524,213.00	3.993983	111	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	139680.4	3.493333	131,267.00	3.493333	106	50 - 150	0.0000	+/-0.50	
M5PFPeA	825599.9	1.791367	823,921.00	1.791367	100	50 - 150	0.0000	+/-0.50	
M5PFHxA	1145822	2.672333	1,131,820.00	2.672333	101	50 - 150	0.0000	+/-0.50	
M3PFHxS	145264.3	3.266817	141,124.00	3.266833	103	50 - 150	0.0000	+/-0.50	
M4PFHpA	1235120	3.2357	1,179,935.00	3.2357	105	50 - 150	0.0000	+/-0.50	
M8PFOA	1165221	3.50185	1,119,574.00	3.51015	104	50 - 150	-0.0083	+/-0.50	
M8PFOS	163323.4	3.692083	163,358.00	3.692083	100	50 - 150	0.0000	+/-0.50	
M9PFNA	1077894	3.693117	1,027,621.00	3.693117	105	50 - 150	0.0000	+/-0.50	
MPFDoA	1713026	4.136817	1,594,256.00	4.136817	107	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	342768.5	4.001467	294,893.00	4.001467	116	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	392264.2	3.921883	301,628.00	3.921883	130	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN S-15 (12-24) (21J1956-20)			Lab File ID: 21J1956-20.d			Analyzed: 11/11/21 17:49			
M8FOSA	507128.2	4.044517	451,140.00	4.044517	112	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	179780.1	2.58715	207,338.00	2.58715	87	50 - 150	0.0000	+/-0.50	
M2PFtA	2191723	4.370283	1,799,881.00	4.378417	122	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	291218.2	3.850917	225,194.00	3.850917	129	50 - 150	0.0000	+/-0.50	
MPFBA	821166.8	1.108317	819,390.00	1.108317	100	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	241103.7	2.91295	298,883.00	2.91295	81	50 - 150	0.0000	+/-0.50	
M6PFDA	1411009	3.851417	1,173,486.00	3.851417	120	50 - 150	0.0000	+/-0.50	
M3PFBS	200881	1.969733	190,139.00	1.978033	106	50 - 150	-0.0083	+/-0.50	
M7PFUnA	1866387	3.993983	1,524,213.00	3.993983	122	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	135193.2	3.493333	131,267.00	3.493333	103	50 - 150	0.0000	+/-0.50	
M5PFPeA	865061.4	1.791367	823,921.00	1.791367	105	50 - 150	0.0000	+/-0.50	
M5PFHxA	1189702	2.672333	1,131,820.00	2.672333	105	50 - 150	0.0000	+/-0.50	
M3PFHxS	155039.2	3.266817	141,124.00	3.266833	110	50 - 150	0.0000	+/-0.50	
M4PFHpA	1296009	3.2357	1,179,935.00	3.2357	110	50 - 150	0.0000	+/-0.50	
M8PFOA	1240345	3.50185	1,119,574.00	3.51015	111	50 - 150	-0.0083	+/-0.50	
M8PFOS	171780.9	3.692083	163,358.00	3.692083	105	50 - 150	0.0000	+/-0.50	
M9PFNA	1126958	3.693117	1,027,621.00	3.693117	110	50 - 150	0.0000	+/-0.50	
MPFDoA	1775433	4.136817	1,594,256.00	4.136817	111	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	387436.4	4.001467	294,893.00	4.001467	131	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	394838.4	3.921883	301,628.00	3.921883	131	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
30MTN S-16 (0-12) (21J1956-21)			Lab File ID: 21J1956-21.d			Analyzed: 11/10/21 20:55			
M8FOSA	467515.1	4.036517	393,192.00	4.044517	119	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	156362.1	2.603583	160,692.00	2.636633	97	50 - 150	-0.0330	+/-0.50	
M2PFTA	1882358	4.386533	1,595,192.00	4.39465	118	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	243062.4	3.858883	226,739.00	3.866833	107	50 - 150	-0.0080	+/-0.50	
MPFBA	784594.8	1.116633	677,435.00	1.116633	116	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	269300.7	2.929717	230,491.00	2.945967	117	50 - 150	-0.0162	+/-0.50	
M6PFDA	1209772	3.851417	1,018,454.00	3.859367	119	50 - 150	-0.0080	+/-0.50	
M3PFBS	179240.8	1.986217	149,326.00	2.011067	120	50 - 150	-0.0249	+/-0.50	
M7PFUnA	1508326	4.001983	1,365,067.00	4.009984	110	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	133246.6	3.501317	118,861.00	3.509617	112	50 - 150	-0.0083	+/-0.50	
M5PFPeA	778681.9	1.80795	668,163.00	1.824517	117	50 - 150	-0.0166	+/-0.50	
M5PFHxA	1038447	2.696967	913,090.00	2.722683	114	50 - 150	-0.0257	+/-0.50	
M3PFHxS	136958.8	3.276217	123,606.00	3.28425	111	50 - 150	-0.0080	+/-0.50	
M4PFHpA	1120979	3.243783	947,771.00	3.251867	118	50 - 150	-0.0081	+/-0.50	
M8PFOA	1133529	3.51015	1,002,525.00	3.51815	113	50 - 150	-0.0080	+/-0.50	
M8PFOS	156538.8	3.700067	132,723.00	3.708283	118	50 - 150	-0.0082	+/-0.50	
M9PFNA	966415.9	3.7011	902,256.00	3.709283	107	50 - 150	-0.0082	+/-0.50	
MPFDoA	1644900	4.144834	1,387,824.00	4.153117	119	50 - 150	-0.0083	+/-0.50	
d5-NEtFOSAA	321328.9	4.00945	302,650.00	4.01745	106	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	379333.4	3.929883	280,463.00	3.937867	135	50 - 150	-0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Rinsate (21J1956-22)									
			Lab File ID: 21J1956-22R.d			Analyzed: 11/09/21 17:22			
M8FOSA	400929.8	4.0525	365,630.00	4.0525	110	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	111025.9	2.62	176,034.00	2.6118	63	50 - 150	0.0082	+/-0.50	
M2PF _{TA}	1382166	4.386533	1,459,197.00	4.386533	95	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	149715.7	3.858883	180,557.00	3.858883	83	50 - 150	0.0000	+/-0.50	
MPF _{BA}	797704.1	1.116633	665,049.00	1.108317	120	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	340319.9	2.937833	305,122.00	2.929717	112	50 - 150	0.0081	+/-0.50	
M6PF _{DA}	940653.9	3.851417	906,735.00	3.851417	104	50 - 150	0.0000	+/-0.50	
M3PF _B S	175793.2	2.002783	160,570.00	1.9945	109	50 - 150	0.0083	+/-0.50	
M7PF _U nA	1174366	4.001983	1,106,943.00	4.001983	106	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	81837.35	3.501317	113,759.00	3.501317	72	50 - 150	0.0000	+/-0.50	
M5PF _{Pe} A	759441.4	1.80795	686,897.00	1.80795	111	50 - 150	0.0000	+/-0.50	
M5PF _{Hx} A	1021354	2.706317	886,969.00	2.69695	115	50 - 150	0.0094	+/-0.50	
M3PF _{Hx} S	134963	3.2762	125,041.00	3.2762	108	50 - 150	0.0000	+/-0.50	
M4PF _{Hp} A	1078497	3.243767	931,364.00	3.243783	116	50 - 150	0.0000	+/-0.50	
M8PF _{OA}	1013245	3.51015	889,744.00	3.51015	114	50 - 150	0.0000	+/-0.50	
M8PF _{OS}	144835.8	3.70005	133,024.00	3.70005	109	50 - 150	0.0000	+/-0.50	
M9PF _{NA}	942434.4	3.7011	809,610.00	3.7011	116	50 - 150	0.0000	+/-0.50	
MPF _{Do} A	1232486	4.144834	1,183,580.00	4.144834	104	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	321566.3	4.00945	248,809.00	4.00945	129	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	268805.9	3.929867	276,127.00	3.929867	97	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Trip Blank (21J1956-23)			Lab File ID: 21J1956-23R.d			Analyzed: 11/09/21 17:29			
M8FOSA	340741.2	4.0525	365,630.00	4.0525	93	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	135829.4	2.6118	176,034.00	2.6118	77	50 - 150	0.0000	+/-0.50	
M2PF _{TA}	1176574	4.386533	1,459,197.00	4.386533	81	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	144277.5	3.858883	180,557.00	3.858883	80	50 - 150	0.0000	+/-0.50	
MPF _{BA}	749983.8	1.108317	665,049.00	1.108317	113	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	306822.3	2.929717	305,122.00	2.929717	101	50 - 150	0.0000	+/-0.50	
M6PF _{DA}	947028.4	3.851417	906,735.00	3.851417	104	50 - 150	0.0000	+/-0.50	
M3PF _{BS}	159462.9	1.9945	160,570.00	1.9945	99	50 - 150	0.0000	+/-0.50	
M7PF _{UnA}	1164217	4.001983	1,106,943.00	4.001983	105	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	83457.82	3.501317	113,759.00	3.501317	73	50 - 150	0.0000	+/-0.50	
M5PF _{PeA}	699375.4	1.80795	686,897.00	1.80795	102	50 - 150	0.0000	+/-0.50	
M5PF _{HxA}	920151.3	2.706317	886,969.00	2.69695	104	50 - 150	0.0094	+/-0.50	
M3PF _{HxS}	122931.5	3.2762	125,041.00	3.2762	98	50 - 150	0.0000	+/-0.50	
M4PF _{HpA}	963362.1	3.243767	931,364.00	3.243783	103	50 - 150	0.0000	+/-0.50	
M8PF _{OA}	944542.4	3.51015	889,744.00	3.51015	106	50 - 150	0.0000	+/-0.50	
M8PF _{OS}	127118.8	3.70005	133,024.00	3.70005	96	50 - 150	0.0000	+/-0.50	
M9PF _{NA}	834182.1	3.7011	809,610.00	3.7011	103	50 - 150	0.0000	+/-0.50	
MPF _{DoA}	1079623	4.144834	1,183,580.00	4.144834	91	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	222588.7	4.00945	248,809.00	4.00945	89	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	234278.3	3.929867	276,127.00	3.929867	85	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Field Blank (21J1956-24)									
			Lab File ID: 21J1956-24R.d			Analyzed: 11/09/21 17:36			
M8FOSA	339264.9	4.0525	365,630.00	4.0525	93	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	148174.9	2.6118	176,034.00	2.6118	84	50 - 150	0.0000	+/-0.50	
M2PFTA	1134336	4.386533	1,459,197.00	4.386533	78	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	143028.1	3.850917	180,557.00	3.858883	79	50 - 150	-0.0080	+/-0.50	
MPFBA	760092.3	1.116633	665,049.00	1.108317	114	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	343839.6	2.937833	305,122.00	2.929717	113	50 - 150	0.0081	+/-0.50	
M6PFDA	1028092	3.851417	906,735.00	3.851417	113	50 - 150	0.0000	+/-0.50	
M3PFBS	167608	1.9945	160,570.00	1.9945	104	50 - 150	0.0000	+/-0.50	
M7PFUnA	1189763	4.001983	1,106,943.00	4.001983	107	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	94602.17	3.501317	113,759.00	3.501317	83	50 - 150	0.0000	+/-0.50	
M5PFPeA	732102.5	1.80795	686,897.00	1.80795	107	50 - 150	0.0000	+/-0.50	
M5PFHxA	963471.1	2.706317	886,969.00	2.69695	109	50 - 150	0.0094	+/-0.50	
M3PFHxS	123520.6	3.2762	125,041.00	3.2762	99	50 - 150	0.0000	+/-0.50	
M4PFHpA	1036753	3.243767	931,364.00	3.243783	111	50 - 150	0.0000	+/-0.50	
M8PFOA	980893.4	3.51015	889,744.00	3.51015	110	50 - 150	0.0000	+/-0.50	
M8PFOS	137615.6	3.70005	133,024.00	3.70005	103	50 - 150	0.0000	+/-0.50	
M9PFNA	893490.8	3.7011	809,610.00	3.7011	110	50 - 150	0.0000	+/-0.50	
MPFDoA	1056991	4.144834	1,183,580.00	4.144834	89	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	211506.3	4.00945	248,809.00	4.00945	85	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	228144.5	3.929867	276,127.00	3.929867	83	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Equipment Blank (21J1956-25)			Lab File ID: 21J1956-25R.d			Analyzed: 11/09/21 17:44			
M8FOSA	378051	4.0525	365,630.00	4.0525	103	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	155424.7	2.6118	176,034.00	2.6118	88	50 - 150	0.0000	+/-0.50	
M2PFTA	1268109	4.3784	1,459,197.00	4.386533	87	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	163948.2	3.858883	180,557.00	3.858883	91	50 - 150	0.0000	+/-0.50	
MPFBA	783300.9	1.116633	665,049.00	1.108317	118	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	335275.5	2.937833	305,122.00	2.929717	110	50 - 150	0.0081	+/-0.50	
M6PFDA	982797.4	3.851417	906,735.00	3.851417	108	50 - 150	0.0000	+/-0.50	
M3PFBS	171763	1.9945	160,570.00	1.9945	107	50 - 150	0.0000	+/-0.50	
M7PFUnA	1143485	4.001983	1,106,943.00	4.001983	103	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	106502.1	3.501317	113,759.00	3.501317	94	50 - 150	0.0000	+/-0.50	
M5PFPeA	755970.5	1.80795	686,897.00	1.80795	110	50 - 150	0.0000	+/-0.50	
M5PFHxA	1007134	2.706317	886,969.00	2.69695	114	50 - 150	0.0094	+/-0.50	
M3PFHxS	133211.4	3.2762	125,041.00	3.2762	107	50 - 150	0.0000	+/-0.50	
M4PFHpA	1050795	3.243767	931,364.00	3.243783	113	50 - 150	0.0000	+/-0.50	
M8PFOA	979203.8	3.51015	889,744.00	3.51015	110	50 - 150	0.0000	+/-0.50	
M8PFOS	136748.9	3.70005	133,024.00	3.70005	103	50 - 150	0.0000	+/-0.50	
M9PFNA	880206.6	3.7011	809,610.00	3.7011	109	50 - 150	0.0000	+/-0.50	
MPFDoA	1170026	4.144834	1,183,580.00	4.144834	99	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	222769.6	4.00945	248,809.00	4.00945	90	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	252765.1	3.929867	276,127.00	3.929867	92	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B293915-BLK1)			Lab File ID: B293915-BLK1.d			Analyzed: 11/05/21 19:57			
M8FOSA	473461.6	4.052516	481,286.00	4.052533	98	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	207492	2.636633	215,862.00	2.636633	96	50 - 150	0.0000	+/-0.50	
M2PFTA	1687124	4.394667	1,804,561.00	4.394667	93	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	220472.8	3.86685	220,923.00	3.86685	100	50 - 150	0.0000	+/-0.50	
MPFBA	954889.8	1.116633	811,332.00	1.116633	118	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	330879.8	2.954083	309,447.00	2.954083	107	50 - 150	0.0000	+/-0.50	
M6PFDA	1290881	3.867333	1,129,918.00	3.86735	114	50 - 150	0.0000	+/-0.50	
M3PFBS	199482.6	2.019367	184,758.00	2.011083	108	50 - 150	0.0083	+/-0.50	
M7PFUnA	1568073	4.009984	1,546,286.00	4.01	101	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	128699.9	3.509617	126,713.00	3.509633	102	50 - 150	0.0000	+/-0.50	
M5PFPeA	903178.3	1.824517	823,261.00	1.824517	110	50 - 150	0.0000	+/-0.50	
M5PFHxA	1234317	2.730867	1,135,918.00	2.730867	109	50 - 150	0.0000	+/-0.50	
M3PFHxS	154725.5	3.2923	141,909.00	3.2923	109	50 - 150	0.0000	+/-0.50	
M4PFHpA	1235323	3.25995	1,140,339.00	3.25995	108	50 - 150	0.0000	+/-0.50	
M8PFOA	1215850	3.526133	1,111,486.00	3.52615	109	50 - 150	0.0000	+/-0.50	
M8PFOS	168752	3.7083	157,825.00	3.7083	107	50 - 150	0.0000	+/-0.50	
M9PFNA	1238674	3.709283	1,084,617.00	3.7093	114	50 - 150	0.0000	+/-0.50	
MPFDoA	1473479	4.153133	1,562,612.00	4.153133	94	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	271632.3	4.01745	278,916.00	4.017467	97	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	296787.3	3.937867	307,136.00	3.937883	97	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B293915-BS1)									
			Lab File ID: B293915-BS1.d			Analyzed: 11/05/21 19:43			
M8FOSA	487667.6	4.052533	481,286.00	4.052533	101	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	222092.3	2.636633	215,862.00	2.636633	103	50 - 150	0.0000	+/-0.50	
M2PFTA	1823129	4.394683	1,804,561.00	4.394667	101	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	233147.5	3.86685	220,923.00	3.86685	106	50 - 150	0.0000	+/-0.50	
MPFBA	1033599	1.116633	811,332.00	1.116633	127	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	300276.3	2.954083	309,447.00	2.954083	97	50 - 150	0.0000	+/-0.50	
M6PFDA	1421236	3.867333	1,129,918.00	3.86735	126	50 - 150	0.0000	+/-0.50	
M3PFBS	211199.7	2.019367	184,758.00	2.011083	114	50 - 150	0.0083	+/-0.50	
M7PFUnA	1650475	4.01	1,546,286.00	4.01	107	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	142118.9	3.509633	126,713.00	3.509633	112	50 - 150	0.0000	+/-0.50	
M5PFPeA	975241.5	1.824517	823,261.00	1.824517	118	50 - 150	0.0000	+/-0.50	
M5PFHxA	1320510	2.730867	1,135,918.00	2.730867	116	50 - 150	0.0000	+/-0.50	
M3PFHxS	167339.9	3.2923	141,909.00	3.2923	118	50 - 150	0.0000	+/-0.50	
M4PFHpA	1335216	3.25995	1,140,339.00	3.25995	117	50 - 150	0.0000	+/-0.50	
M8PFOA	1382607	3.52615	1,111,486.00	3.52615	124	50 - 150	0.0000	+/-0.50	
M8PFOS	184400.7	3.7083	157,825.00	3.7083	117	50 - 150	0.0000	+/-0.50	
M9PFNA	1328009	3.7093	1,084,617.00	3.7093	122	50 - 150	0.0000	+/-0.50	
MPFDoA	1736829	4.153133	1,562,612.00	4.153133	111	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	275734	4.017467	278,916.00	4.017467	99	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	324368.5	3.937883	307,136.00	3.937883	106	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS Dup (B293915-BSD1)									
			Lab File ID: B293915-BSD1.d			Analyzed: 11/05/21 19:50			
M8FOSA	435788.5	4.052516	481,286.00	4.052533	91	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	192800.9	2.636633	215,862.00	2.636633	89	50 - 150	0.0000	+/-0.50	
M2PF _{TA}	1744195	4.394667	1,804,561.00	4.394667	97	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	216087	3.86685	220,923.00	3.86685	98	50 - 150	0.0000	+/-0.50	
MPF _{BA}	885518.1	1.116633	811,332.00	1.116633	109	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	301239.3	2.954083	309,447.00	2.954083	97	50 - 150	0.0000	+/-0.50	
M6PF _{DA}	1172512	3.867333	1,129,918.00	3.86735	104	50 - 150	0.0000	+/-0.50	
M3PF _{BS}	184934.7	2.019367	184,758.00	2.011083	100	50 - 150	0.0083	+/-0.50	
M7PF _{UnA}	1504432	4.009984	1,546,286.00	4.01	97	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	119318.9	3.509617	126,713.00	3.509633	94	50 - 150	0.0000	+/-0.50	
M5PF _{PeA}	840424.3	1.824517	823,261.00	1.824517	102	50 - 150	0.0000	+/-0.50	
M5PF _{HxA}	1136480	2.730867	1,135,918.00	2.730867	100	50 - 150	0.0000	+/-0.50	
M3PF _{HxS}	144116.9	3.2923	141,909.00	3.2923	102	50 - 150	0.0000	+/-0.50	
M4PF _{HpA}	1149070	3.25995	1,140,339.00	3.25995	101	50 - 150	0.0000	+/-0.50	
M8PF _{OA}	1130296	3.52615	1,111,486.00	3.52615	102	50 - 150	0.0000	+/-0.50	
M8PF _{OS}	161194.4	3.7083	157,825.00	3.7083	102	50 - 150	0.0000	+/-0.50	
M9PF _{NA}	1137706	3.709283	1,084,617.00	3.7093	105	50 - 150	0.0000	+/-0.50	
MPF _{DoA}	1498372	4.153133	1,562,612.00	4.153133	96	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	274626.9	4.01745	278,916.00	4.017467	98	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	284675.4	3.937883	307,136.00	3.937883	93	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B294033-BLK1)			Lab File ID: B294033-BLK1.d			Analyzed: 11/10/21 19:14			
M8FOSA	429016.3	4.044517	393,192.00	4.044517	109	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	177817.3	2.636617	160,692.00	2.644867	111	50 - 150	-0.0082	+/-0.50	
M2PFTA	1578890	4.39465	1,595,192.00	4.39465	99	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	205446.4	3.866833	226,739.00	3.866833	91	50 - 150	0.0000	+/-0.50	
MPFBA	706423.2	1.116633	677,435.00	1.116633	104	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	265918.4	2.954083	230,491.00	2.954083	115	50 - 150	0.0000	+/-0.50	
M6PFDA	1102411	3.867333	1,018,454.00	3.867333	108	50 - 150	0.0000	+/-0.50	
M3PFBS	159121.3	2.019367	149,326.00	2.019367	107	50 - 150	0.0000	+/-0.50	
M7PFUnA	1385367	4.009984	1,365,067.00	4.017967	101	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	117891.1	3.509617	118,861.00	3.509617	99	50 - 150	0.0000	+/-0.50	
M5PFPeA	696645.8	1.824517	668,163.00	1.8328	104	50 - 150	-0.0083	+/-0.50	
M5PFHxA	974444.4	2.730867	913,090.00	2.730867	107	50 - 150	0.0000	+/-0.50	
M3PFHxS	130763.8	3.28425	123,606.00	3.2923	106	50 - 150	-0.0080	+/-0.50	
M4PFHpA	1002456	3.25995	947,771.00	3.25995	106	50 - 150	0.0000	+/-0.50	
M8PFOA	991618.7	3.526133	1,002,525.00	3.526133	99	50 - 150	0.0000	+/-0.50	
M8PFOS	149775.8	3.708283	132,723.00	3.708283	113	50 - 150	0.0000	+/-0.50	
M9PFNA	1028584	3.709283	902,256.00	3.709283	114	50 - 150	0.0000	+/-0.50	
MPFDoA	1414039	4.153117	1,387,824.00	4.153117	102	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	267962	4.01745	302,650.00	4.025434	89	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	271198.5	3.945867	280,463.00	3.945867	97	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B294033-BS1)			Lab File ID: B294033-BS1.d			Analyzed: 11/10/21 19:07			
M8FOSA	507811.9	4.044517	393,192.00	4.044517	129	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	201720	2.636633	160,692.00	2.644867	126	50 - 150	-0.0082	+/-0.50	
M2PFTA	1920522	4.394667	1,595,192.00	4.39465	120	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	228061	3.866833	226,739.00	3.866833	101	50 - 150	0.0000	+/-0.50	
MPFBA	819892.8	1.116633	677,435.00	1.116633	121	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	293902.4	2.954083	230,491.00	2.954083	128	50 - 150	0.0000	+/-0.50	
M6PFDA	1276603	3.867333	1,018,454.00	3.867333	125	50 - 150	0.0000	+/-0.50	
M3PFBS	195916.2	2.019367	149,326.00	2.019367	131	50 - 150	0.0000	+/-0.50	
M7PFUnA	1573698	4.009984	1,365,067.00	4.017967	115	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	137275.6	3.509617	118,861.00	3.509617	115	50 - 150	0.0000	+/-0.50	
M5PFPeA	812180	1.824517	668,163.00	1.8328	122	50 - 150	-0.0083	+/-0.50	
M5PFHxA	1130201	2.730867	913,090.00	2.730867	124	50 - 150	0.0000	+/-0.50	
M3PFHxS	156806.5	3.2923	123,606.00	3.2923	127	50 - 150	0.0000	+/-0.50	
M4PFHpA	1173305	3.25995	947,771.00	3.25995	124	50 - 150	0.0000	+/-0.50	
M8PFOA	1213635	3.526133	1,002,525.00	3.526133	121	50 - 150	0.0000	+/-0.50	
M8PFOS	177309.4	3.708283	132,723.00	3.708283	134	50 - 150	0.0000	+/-0.50	
M9PFNA	1134643	3.709283	902,256.00	3.709283	126	50 - 150	0.0000	+/-0.50	
MPFDoA	1728049	4.153117	1,387,824.00	4.153117	125	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	300634.3	4.01745	302,650.00	4.025434	99	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	318777.5	3.945867	280,463.00	3.945867	114	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B294034-BLK1)			Lab File ID: B294034-BLK1.d			Analyzed: 11/11/21 15:02			
M8FOSA	464275.4	4.044517	451,140.00	4.044517	103	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	175119.4	2.595367	207,338.00	2.595367	84	50 - 150	0.0000	+/-0.50	
M2PFTA	1882375	4.378417	1,799,881.00	4.378417	105	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	205608.8	3.850917	225,194.00	3.850917	91	50 - 150	0.0000	+/-0.50	
MPFBA	831358	1.108317	819,390.00	1.108317	101	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	248823.7	2.921133	298,883.00	2.921133	83	50 - 150	0.0000	+/-0.50	
M6PFDA	1298873	3.851417	1,173,486.00	3.851417	111	50 - 150	0.0000	+/-0.50	
M3PFBS	197197.8	1.986217	190,139.00	1.978033	104	50 - 150	0.0082	+/-0.50	
M7PFUnA	1569260	4.001983	1,524,213.00	4.001983	103	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	121362.6	3.493333	131,267.00	3.493333	92	50 - 150	0.0000	+/-0.50	
M5PFPeA	845317.7	1.79965	823,921.00	1.791367	103	50 - 150	0.0083	+/-0.50	
M5PFHxA	1170854	2.680533	1,131,820.00	2.680533	103	50 - 150	0.0000	+/-0.50	
M3PFHxS	149913.2	3.266817	141,124.00	3.266833	106	50 - 150	0.0000	+/-0.50	
M4PFHpA	1260995	3.2357	1,179,935.00	3.2357	107	50 - 150	0.0000	+/-0.50	
M8PFOA	1135770	3.51015	1,119,574.00	3.51015	101	50 - 150	0.0000	+/-0.50	
M8PFOS	176013.1	3.692083	163,358.00	3.692083	108	50 - 150	0.0000	+/-0.50	
M9PFNA	1092639	3.693117	1,027,621.00	3.693117	106	50 - 150	0.0000	+/-0.50	
MPFDoA	1646766	4.136817	1,594,256.00	4.136817	103	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	296149.7	4.00945	294,893.00	4.001467	100	50 - 150	0.0080	+/-0.50	
d3-NMeFOSAA	293473.2	3.929883	301,628.00	3.929883	97	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B294034-BS1) Lab File ID: B294034-BS1.d Analyzed: 11/11/21 14:55									
M8FOSA	478732.2	4.044517	451,140.00	4.044517	106	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	172330.2	2.595367	207,338.00	2.595367	83	50 - 150	0.0000	+/-0.50	
M2PFTA	2061948	4.378417	1,799,881.00	4.378417	115	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	214688.6	3.850917	225,194.00	3.850917	95	50 - 150	0.0000	+/-0.50	
MPFBA	872012.7	1.108317	819,390.00	1.108317	106	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	259805.1	2.921133	298,883.00	2.921133	87	50 - 150	0.0000	+/-0.50	
M6PFDA	1290007	3.851417	1,173,486.00	3.851417	110	50 - 150	0.0000	+/-0.50	
M3PFBS	205992.5	1.978033	190,139.00	1.978033	108	50 - 150	0.0000	+/-0.50	
M7PFUnA	1702359	4.001983	1,524,213.00	4.001983	112	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	119222.8	3.493333	131,267.00	3.493333	91	50 - 150	0.0000	+/-0.50	
M5PFPeA	885906.7	1.79965	823,921.00	1.791367	108	50 - 150	0.0083	+/-0.50	
M5PFHxA	1232148	2.680533	1,131,820.00	2.680533	109	50 - 150	0.0000	+/-0.50	
M3PFHxS	153694.2	3.266833	141,124.00	3.266833	109	50 - 150	0.0000	+/-0.50	
M4PFHpA	1287061	3.2357	1,179,935.00	3.2357	109	50 - 150	0.0000	+/-0.50	
M8PFOA	1243128	3.51015	1,119,574.00	3.51015	111	50 - 150	0.0000	+/-0.50	
M8PFOS	174240.6	3.692083	163,358.00	3.692083	107	50 - 150	0.0000	+/-0.50	
M9PFNA	1109024	3.693117	1,027,621.00	3.693117	108	50 - 150	0.0000	+/-0.50	
MPFDoA	1741521	4.136817	1,594,256.00	4.136817	109	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	289329.7	4.00945	294,893.00	4.001467	98	50 - 150	0.0080	+/-0.50	
d3-NMeFOSAA	294036.4	3.929883	301,628.00	3.929883	97	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Matrix Spike (B294034-MS1)			Lab File ID: B294034-MS1.d			Analyzed: 11/11/21 15:09			
M8FOSA	438664.1	4.044517	451,140.00	4.044517	97	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	144048.4	2.595367	207,338.00	2.595367	69	50 - 150	0.0000	+/-0.50	
M2PFTA	1748276	4.378417	1,799,881.00	4.378417	97	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	200171.6	3.850917	225,194.00	3.850917	89	50 - 150	0.0000	+/-0.50	
MPFBA	706924.8	1.108317	819,390.00	1.108317	86	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	209958.9	2.921133	298,883.00	2.921133	70	50 - 150	0.0000	+/-0.50	
M6PFDA	1143065	3.851417	1,173,486.00	3.851417	97	50 - 150	0.0000	+/-0.50	
M3PFBS	175788.1	1.978033	190,139.00	1.978033	92	50 - 150	0.0000	+/-0.50	
M7PFUnA	1452975	4.001983	1,524,213.00	4.001983	95	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	104953	3.493333	131,267.00	3.493333	80	50 - 150	0.0000	+/-0.50	
M5PFPeA	747564.2	1.79965	823,921.00	1.791367	91	50 - 150	0.0083	+/-0.50	
M5PFHxA	1041713	2.680533	1,131,820.00	2.680533	92	50 - 150	0.0000	+/-0.50	
M3PFHxS	126593.8	3.266833	141,124.00	3.266833	90	50 - 150	0.0000	+/-0.50	
M4PFHpA	1105582	3.2357	1,179,935.00	3.2357	94	50 - 150	0.0000	+/-0.50	
M8PFOA	1066548	3.51015	1,119,574.00	3.51015	95	50 - 150	0.0000	+/-0.50	
M8PFOS	126879.3	3.692083	163,358.00	3.692083	78	50 - 150	0.0000	+/-0.50	
M9PFNA	828727.8	3.693117	1,027,621.00	3.693117	81	50 - 150	0.0000	+/-0.50	
MPFDoA	1520724	4.136817	1,594,256.00	4.136817	95	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	279209.2	4.00945	294,893.00	4.001467	95	50 - 150	0.0080	+/-0.50	
d3-NMeFOSAA	338331.7	3.929883	301,628.00	3.929883	112	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Matrix Spike Dup (B294034-MSD1)									
			Lab File ID: B294034-MSD1.d			Analyzed: 11/11/21 15:16			
M8FOSA	444071	4.044517	451,140.00	4.044517	98	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	156710.8	2.595367	207,338.00	2.595367	76	50 - 150	0.0000	+/-0.50	
M2PFTA	1812574	4.378417	1,799,881.00	4.378417	101	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	216073.1	3.850917	225,194.00	3.850917	96	50 - 150	0.0000	+/-0.50	
MPFBA	756292.9	1.108317	819,390.00	1.108317	92	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	234136.7	2.921133	298,883.00	2.921133	78	50 - 150	0.0000	+/-0.50	
M6PFDA	1202675	3.851417	1,173,486.00	3.851417	102	50 - 150	0.0000	+/-0.50	
M3PFBS	185095.6	1.978033	190,139.00	1.978033	97	50 - 150	0.0000	+/-0.50	
M7PFUnA	1528256	4.001983	1,524,213.00	4.001983	100	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	108907.6	3.493333	131,267.00	3.493333	83	50 - 150	0.0000	+/-0.50	
M5PFPeA	770192.4	1.791367	823,921.00	1.791367	93	50 - 150	0.0000	+/-0.50	
M5PFHxA	1066654	2.680533	1,131,820.00	2.680533	94	50 - 150	0.0000	+/-0.50	
M3PFHxS	135515.7	3.266833	141,124.00	3.266833	96	50 - 150	0.0000	+/-0.50	
M4PFHpA	1123983	3.2357	1,179,935.00	3.2357	95	50 - 150	0.0000	+/-0.50	
M8PFOA	1075653	3.51015	1,119,574.00	3.51015	96	50 - 150	0.0000	+/-0.50	
M8PFOS	126529.9	3.692083	163,358.00	3.692083	77	50 - 150	0.0000	+/-0.50	
M9PFNA	817698.3	3.693117	1,027,621.00	3.693117	80	50 - 150	0.0000	+/-0.50	
MPFDoA	1620186	4.136817	1,594,256.00	4.136817	102	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	293497.9	4.00945	294,893.00	4.001467	100	50 - 150	0.0080	+/-0.50	
d3-NMeFOSAA	338433.2	3.929883	301,628.00	3.929883	112	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B294575-BLK1)									
			Lab File ID: B294575-BLK1.d			Analyzed: 11/15/21 18:58			
M8FOSA	407379.8	4.052516	311,249.00	4.052516	131	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	115365.3	2.678933	128,851.00	2.678933	90	50 - 150	0.0000	+/-0.50	
M2PFTA	1661229	4.4109	1,273,177.00	4.4109	130	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	141318.8	3.88305	145,046.00	3.88305	97	50 - 150	0.0000	+/-0.50	
MPFBA	678491	1.13325	515,200.00	1.13325	132	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	214410.4	2.978433	179,402.00	2.978433	120	50 - 150	0.0000	+/-0.50	
M6PFDA	1066047	3.883567	788,638.00	3.883567	135	50 - 150	0.0000	+/-0.50	
M3PFBS	153635.5	2.054933	117,778.00	2.044217	130	50 - 150	0.0107	+/-0.50	
M7PFUnA	1337448	4.03395	977,512.00	4.033967	137	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	77325.73	3.533583	83,394.00	3.5336	93	50 - 150	0.0000	+/-0.50	
M5PFPeA	676308.7	1.857667	516,196.00	1.857667	131	50 - 150	0.0000	+/-0.50	
M5PFHxA	957237.7	2.763583	711,163.00	2.763583	135	50 - 150	0.0000	+/-0.50	
M3PFHxS	128407.5	3.308383	92,621.00	3.308383	139	50 - 150	0.0000	+/-0.50	
M4PFHpA	994516	3.27725	719,839.00	3.27725	138	50 - 150	0.0000	+/-0.50	
M8PFOA	1014359	3.542117	739,739.00	3.542117	137	50 - 150	0.0000	+/-0.50	
M8PFOS	155679.5	3.724217	107,190.00	3.724233	145	50 - 150	0.0000	+/-0.50	
M9PFNA	1003805	3.725217	748,112.00	3.725217	134	50 - 150	0.0000	+/-0.50	
MPFDoA	1423902	4.169267	1,035,336.00	4.169267	138	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	225845.1	4.041433	196,430.00	4.041433	115	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	235990.4	3.96185	185,650.00	3.96185	127	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<p>LCS (B294575-BS1) Lab File ID: B294575-BS1.d Analyzed: 11/15/21 18:51</p>									
M8FOSA	383667.2	4.052516	311,249.00	4.052516	123	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	103122.5	2.678933	128,851.00	2.678933	80	50 - 150	0.0000	+/-0.50	
M2PFTA	1641409	4.4109	1,273,177.00	4.4109	129	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	129779.3	3.88305	145,046.00	3.88305	89	50 - 150	0.0000	+/-0.50	
MPFBA	667425.6	1.13325	515,200.00	1.13325	130	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	200409.4	2.978433	179,402.00	2.978433	112	50 - 150	0.0000	+/-0.50	
M6PFDA	965228.1	3.883567	788,638.00	3.883567	122	50 - 150	0.0000	+/-0.50	
M3PFBS	144162.7	2.054933	117,778.00	2.044217	122	50 - 150	0.0107	+/-0.50	
M7PFUnA	1287194	4.033967	977,512.00	4.033967	132	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	78842.82	3.5336	83,394.00	3.5336	95	50 - 150	0.0000	+/-0.50	
M5PFPeA	649074.2	1.857667	516,196.00	1.857667	126	50 - 150	0.0000	+/-0.50	
M5PFHxA	902005.6	2.763583	711,163.00	2.763583	127	50 - 150	0.0000	+/-0.50	
M3PFHxS	123580	3.308383	92,621.00	3.308383	133	50 - 150	0.0000	+/-0.50	
M4PFHpA	932019.6	3.27725	719,839.00	3.27725	129	50 - 150	0.0000	+/-0.50	
M8PFOA	942549.8	3.542117	739,739.00	3.542117	127	50 - 150	0.0000	+/-0.50	
M8PFOS	134067.1	3.724233	107,190.00	3.724233	125	50 - 150	0.0000	+/-0.50	
M9PFNA	962039.8	3.725217	748,112.00	3.725217	129	50 - 150	0.0000	+/-0.50	
MPFDoA	1323406	4.169267	1,035,336.00	4.169267	128	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	218255.2	4.041433	196,430.00	4.041433	111	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	217418.1	3.96185	185,650.00	3.96185	117	50 - 150	0.0000	+/-0.50	

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S065097-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	430	0.8628989	0.81235		-14.0	30
Perfluorobutanesulfonic acid (PFBS)	A	444	381	0.9900012	0.9081413		-14.2	30
Perfluoropentanoic acid (PFPeA)	A	500	424	0.9353824	0.8669991		-15.2	30
Perfluorohexanoic acid (PFHxA)	A	500	428	0.86678	0.8235863		-14.5	30
11Cl-PF3OUdS (F53B Minor)	A	472	450	1.835659	1.769948		-4.7	30
9Cl-PF3ONS (F53B Major)	A	466	411	3.897292	3.435621		-11.7	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	399	1.602632	1.433889		-15.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	368	2.979159	0.1071095		-26.4	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	416	0.7665044	0.7407103		-13.3	30
Perfluorodecanoic acid (PFDA)	A	500	424	0.929213	0.877915		-15.2	30
Perfluorododecanoic acid (PFDoA)	A	500	391	0.9361562	0.7819657		-21.8	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	413	3.93233	3.57192		-7.2	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	484	0.4568315	0.4755796		1.7	30
N-EtFOSAA	A	500	462	0.9836556	0.9177034		-7.7	30
N-MeFOSAA	A	500	396	1.027301	0.9051421		-20.7	30
Perfluorotetradecanoic acid (PFTA)	A	500	436	0.8542676	0.8350097		-12.8	30
Perfluorotridecanoic acid (PFTrDA)	A	500	427	1.009812	0.970651		-14.6	30
Perfluorodecanesulfonic acid (PFDS)	A	482	433	0.6287667	0.583378		-10.1	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	446	1.061084	1.109772		-4.7	30
Perfluorooctanesulfonamide (FOSA)	A	500	403	0.8334166	0.7405949		-19.4	30
Perfluorononanesulfonic acid (PFNS)	A	481	542	0.319818	0.3643278		12.6	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	491	0.3462983	0.3243357		-1.8	30
Perfluoro-1-butanesulfonamide (FBSA)	A	500	430	0.3044628	0.2835496		-14.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	415	0.9652933	0.9387527		-9.3	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	468	0.495495	0.4631782		-6.5	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	459	0.5879048	0.5388719		-8.2	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	435	1.004025	0.998727		-8.6	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	391	0.9760894	0.9026289		-16.8	30
Perfluoroundecanoic acid (PFUnA)	A	500	411	0.8528971	0.7690712		-17.9	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	448	0.3237613	0.2933545		-10.3	30
Perfluoroheptanoic acid (PFHpA)	A	500	489	0.9139933	0.8961905		-2.3	30
Perfluorooctanoic acid (PFOA)	A	500	438	0.8653288	0.7618155		-12.3	30
Perfluorooctanesulfonic acid (PFOS)	A	464	489	0.9382121	1.055682		5.3	30
Perfluorononanoic acid (PFNA)	A	500	470	0.938444	0.9075832		-6.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S065097-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2330	0.8628989	0.8804378		-6.8	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2190	0.9900012	1.043773		-1.4	30
Perfluoropentanoic acid (PFPeA)	A	2500	2330	0.9353824	0.9525622		-6.9	30
Perfluorohexanoic acid (PFHxA)	A	2500	2300	0.86678	0.8860011		-8.0	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2660	1.835659	2.114229		12.7	30
9Cl-PF3ONS (F53B Major)	A	2330	2470	3.897292	4.166254		5.9	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2310	1.602632	1.658753		-2.2	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2050	2.979159	0.1200984		-18.0	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2580	0.7665044	0.9072743		7.5	30
Perfluorodecanoic acid (PFDA)	A	2500	2260	0.929213	0.9356467		-9.7	30
Perfluorododecanoic acid (PFDoA)	A	2500	2560	0.9361562	1.024395		2.4	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2270	3.93233	3.965439		2.1	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2760	0.4568315	0.5428543		16.0	30
N-EtFOSAA	A	2500	2530	0.9836556	1.012423		1.3	30
N-MeFOSAA	A	2500	2350	1.027301	1.074423		-5.9	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2540	0.8542676	0.9659105		1.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2390	1.009812	1.079797		-4.3	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2430	0.6287667	0.6533971		0.7	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2520	1.061084	1.23898		7.6	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2290	0.8334166	0.8404284		-8.6	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2790	0.319818	0.376577		16.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2650	0.3462983	0.3549101		6.0	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2440	0.3044628	0.3216921		-2.4	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2150	0.9652933	0.9738934		-5.9	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2580	0.495495	0.5140906		3.1	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2580	0.5879048	0.609647		3.2	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2620	1.004025	1.185898		9.9	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2190	0.9760894	1.01223		-6.7	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2320	0.8528971	0.8682173		-7.3	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2560	0.3237613	0.3375526		2.6	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2510	0.9139933	0.9266003		0.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2570	0.8653288	0.9019435		2.9	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2510	0.9382121	1.082453		8.0	30
Perfluorononanoic acid (PFNA)	A	2500	2480	0.938444	0.9611902		-0.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S065097-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2320	0.8628989	0.8775319		-7.1	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2190	0.9900012	1.044232		-1.4	30
Perfluoropentanoic acid (PFPeA)	A	2500	2360	0.9353824	0.964994		-5.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2320	0.86678	0.8946529		-7.1	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2420	1.835659	1.920737		2.5	30
9Cl-PF3ONS (F53B Major)	A	2330	2370	3.897292	3.993202		1.6	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2300	1.602632	1.65287		-2.6	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2130	2.979159	0.1251296		-14.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2530	0.7665044	0.8919733		5.6	30
Perfluorodecanoic acid (PFDA)	A	2500	2160	0.929213	0.8961936		-13.5	30
Perfluorododecanoic acid (PFDoA)	A	2500	2480	0.9361562	0.9940885		-0.6	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2250	3.93233	3.938171		1.4	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2160	0.4568315	0.4245911		-9.3	30
N-EtFOSAA	A	2500	2620	0.9836556	1.046065		4.7	30
N-MeFOSAA	A	2500	2380	1.027301	1.085856		-4.9	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2540	0.8542676	0.9665023		1.6	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2470	1.009812	1.113366		-1.3	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2420	1.061084	1.189359		3.2	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2370	0.6287667	0.6392379		-1.5	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2300	0.8334166	0.8463212		-7.9	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2560	0.319818	0.3456415		6.8	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2660	0.3462983	0.3563994		6.5	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2440	0.3044628	0.3222368		-2.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2100	0.9652933	0.952316		-7.9	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2580	0.495495	0.5140982		3.1	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2590	0.5879048	0.6112138		3.5	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2430	1.004025	1.10295		2.1	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2060	0.9760894	0.9516514		-12.2	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2290	0.8528971	0.8588887		-8.3	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2580	0.3237613	0.339602		3.2	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2460	0.9139933	0.9076204		-1.6	30
Perfluorooctanoic acid (PFOA)	A	2500	2550	0.8653288	0.8936861		2.0	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2230	0.9382121	0.9641402		-3.8	30
Perfluorononanoic acid (PFNA)	A	2500	2400	0.938444	0.9318051		-3.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S065193-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	430	0.8628989	0.812246		-14.0	30
Perfluorobutanesulfonic acid (PFBS)	A	444	380	0.9900012	0.9057642		-14.5	30
Perfluoropentanoic acid (PFPeA)	A	500	432	0.9353824	0.8845059		-13.5	30
Perfluorohexanoic acid (PFHxA)	A	500	447	0.86678	0.8597585		-10.7	30
11Cl-PF3OUdS (F53B Minor)	A	472	483	1.835659	1.901037		2.3	30
9Cl-PF3ONS (F53B Major)	A	466	425	3.897292	3.547621		-8.9	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	429	1.602632	1.540415		-9.2	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	366	2.979159	0.1066423		-26.7	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	548	0.7665044	0.9752743		14.2	30
Perfluorodecanoic acid (PFDA)	A	500	409	0.929213	0.8479211		-18.1	30
Perfluorododecanoic acid (PFDoA)	A	500	414	0.9361562	0.8288102		-17.2	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	416	3.93233	3.595173		-6.6	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	387	0.4568315	0.380312		-18.7	30
N-EtFOSAA	A	500	419	0.9836556	0.8329432		-16.2	30
N-MeFOSAA	A	500	390	1.027301	0.8896324		-22.1	30
Perfluorotetradecanoic acid (PFTA)	A	500	459	0.8542676	0.8795762		-8.2	30
Perfluorotridecanoic acid (PFTrDA)	A	500	390	1.009812	0.8874929		-21.9	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	428	1.061084	1.064296		-8.6	30
Perfluorodecanesulfonic acid (PFDS)	A	482	436	0.6287667	0.5875307		-9.5	30
Perfluorooctanesulfonamide (FOSA)	A	500	430	0.8334166	0.7903497		-14.0	30
Perfluorononanesulfonic acid (PFNS)	A	481	420	0.319818	0.2827318		-12.6	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	533	0.3462983	0.3522219		6.6	30
Perfluoro-1-butanesulfonamide (FBSA)	A	500	469	0.3044628	0.3092859		-6.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	426	0.9652933	0.9640774		-6.8	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	470	0.495495	0.4660075		-5.9	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	457	0.5879048	0.5364524		-8.6	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	423	1.004025	0.9719038		-11.0	30
Perfluoropetanesulfonic acid (PFPeS)	A	470	365	0.9760894	0.8429797		-22.3	30
Perfluoroundecanoic acid (PFUnA)	A	500	435	0.8528971	0.8148841		-13.0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	480	0.3237613	0.3138713		-4.0	30
Perfluoroheptanoic acid (PFHpA)	A	500	471	0.9139933	0.8638247		-5.8	30
Perfluorooctanoic acid (PFOA)	A	500	475	0.8653288	0.8251183		-5.1	30
Perfluorooctanesulfonic acid (PFOS)	A	464	399	0.9382121	0.8624749		-14.0	30
Perfluorononanoic acid (PFNA)	A	500	446	0.938444	0.8610913		-10.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S065193-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2380	0.8628989	0.8995787		-4.7	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2200	0.9900012	1.047284		-1.1	30
Perfluoropentanoic acid (PFPeA)	A	2500	2390	0.9353824	0.9759035		-4.6	30
Perfluorohexanoic acid (PFHxA)	A	2500	2380	0.86678	0.917677		-4.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2420	1.835659	1.92478		2.7	30
9Cl-PF3ONS (F53B Major)	A	2330	2400	3.897292	4.05115		3.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2310	1.602632	1.663269		-1.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	1960	2.979159	0.1146334		-21.7	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2770	0.7665044	0.9750795		15.6	30
Perfluorodecanoic acid (PFDA)	A	2500	2360	0.929213	0.9788841		-5.5	30
Perfluorododecanoic acid (PFDoA)	A	2500	2320	0.9361562	0.9275358		-7.3	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2270	3.93233	3.969859		2.2	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2390	0.4568315	0.4700091		0.4	30
N-EtFOSAA	A	2500	2280	0.9836556	0.9100714		-8.9	30
N-MeFOSAA	A	2500	2420	1.027301	1.106819		-3.0	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2340	0.8542676	0.8906106		-6.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2380	1.009812	1.075504		-4.6	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2420	0.6287667	0.6530737		0.6	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2410	1.061084	1.18768		3.1	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2470	0.8334166	0.9066466		-1.4	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2500	0.319818	0.3373986		4.3	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2760	0.3462983	0.3693868		10.3	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2520	0.3044628	0.3318331		0.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2270	0.9652933	1.031588		-0.3	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2640	0.495495	0.5265402		5.5	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2620	0.5879048	0.6189643		4.8	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2820	1.004025	1.275926		18.4	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2270	0.9760894	1.047715		-3.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2320	0.8528971	0.8702713		-7.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2710	0.3237613	0.3565569		8.3	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2580	0.9139933	0.9528248		3.2	30
Perfluorooctanoic acid (PFOA)	A	2500	2580	0.8653288	0.9045224		3.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2130	0.9382121	0.9216298		-8.1	30
Perfluorononanoic acid (PFNA)	A	2500	2450	0.938444	0.9481167		-2.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S065193-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2360	0.8628989	0.8930858		-5.4	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2190	0.9900012	1.043439		-1.5	30
Perfluoropentanoic acid (PFPeA)	A	2500	2370	0.9353824	0.9702235		-5.1	30
Perfluorohexanoic acid (PFHxA)	A	2500	2350	0.86678	0.9052124		-6.0	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2640	1.835659	2.095784		11.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2650	3.897292	4.473237		13.6	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2260	1.602632	1.624912		-4.2	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2020	2.979159	0.1183483		-19.2	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2720	0.7665044	0.9554875		13.3	30
Perfluorodecanoic acid (PFDA)	A	2500	2100	0.929213	0.8704248		-16.0	30
Perfluorododecanoic acid (PFDoA)	A	2500	2520	0.9361562	1.010519		1.0	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2280	3.93233	3.991677		2.8	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2660	0.4568315	0.5221496		11.6	30
N-EtFOSAA	A	2500	2500	0.9836556	0.9998938		0.08	30
N-MeFOSAA	A	2500	2140	1.027301	0.9761852		-14.5	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2490	0.8542676	0.948065		-0.4	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2520	1.009812	1.135268		0.7	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2610	1.061084	1.28163		11.4	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2610	0.6287667	0.7023388		8.2	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2500	0.8334166	0.9196404		0.05	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2550	0.319818	0.3435179		6.2	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2470	0.3462983	0.3304193		-1.2	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2500	0.3044628	0.3293527		-0.08	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2210	0.9652933	1.000475		-3.3	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2650	0.495495	0.5297108		6.2	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2660	0.5879048	0.6296098		6.5	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2550	1.004025	1.158248		7.3	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2270	0.9760894	1.047941		-3.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2280	0.8528971	0.8541395		-8.8	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2790	0.3237613	0.3680313		11.8	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2590	0.9139933	0.9576801		3.7	30
Perfluorooctanoic acid (PFOA)	A	2500	2580	0.8653288	0.9048242		3.3	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2420	0.9382121	1.046347		4.4	30
Perfluorononanoic acid (PFNA)	A	2500	2460	0.938444	0.9553772		-1.4	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S065193-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2350	0.8628989	0.8860905		-6.2	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2140	0.9900012	1.019276		-3.7	30
Perfluoropentanoic acid (PFPeA)	A	2500	2330	0.9353824	0.9547375		-6.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2350	0.86678	0.903339		-6.2	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2290	1.835659	1.818587		-2.9	30
9Cl-PF3ONS (F53B Major)	A	2330	2320	3.897292	3.918012		-0.3	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2230	1.602632	1.600545		-5.6	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2060	2.979159	0.1205975		-17.7	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2590	0.7665044	0.911715		8.0	30
Perfluorodecanoic acid (PFDA)	A	2500	2280	0.929213	0.9451302		-8.8	30
Perfluorododecanoic acid (PFDoA)	A	2500	2500	0.9361562	0.9999374		-0.06	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2260	3.93233	3.950489		1.7	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2670	0.4568315	0.52528		12.2	30
N-EtFOSAA	A	2500	2310	0.9836556	0.9238697		-7.5	30
N-MeFOSAA	A	2500	2210	1.027301	1.010166		-11.5	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2350	0.8542676	0.8951266		-6.0	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2400	1.009812	1.083532		-3.9	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2470	0.6287667	0.6649487		2.4	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2400	1.061084	1.183794		2.7	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2340	0.8334166	0.8600857		-6.4	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2480	0.319818	0.3345653		3.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2700	0.3462983	0.3611759		7.9	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2520	0.3044628	0.3322971		0.8	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2260	0.9652933	1.026943		-0.7	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2610	0.495495	0.5202772		4.3	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2640	0.5879048	0.6236201		5.5	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2630	1.004025	1.190113		10.3	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2320	0.9760894	1.068538		-1.5	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2670	0.8528971	1.001401		6.9	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2740	0.3237613	0.3604289		9.5	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2520	0.9139933	0.928855		0.7	30
Perfluorooctanoic acid (PFOA)	A	2500	2550	0.8653288	0.8922683		1.8	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2280	0.9382121	0.9834333		-1.9	30
Perfluorononanoic acid (PFNA)	A	2500	2510	0.938444	0.9722193		0.3	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S065193-CCV5

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2350	0.8628989	0.8883123		-5.9	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2230	0.9900012	1.064607		0.5	30
Perfluoropentanoic acid (PFPeA)	A	2500	2340	0.9353824	0.9563209		-6.5	30
Perfluorohexanoic acid (PFHxA)	A	2500	2320	0.86678	0.8914917		-7.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2450	1.835659	1.945374		3.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2340	3.897292	3.954361		0.6	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2360	1.602632	1.696537		0.02	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	1920	2.979159	0.1121971		-23.4	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	3130	0.7665044	1.099453		30.6	30 *
Perfluorodecanoic acid (PFDA)	A	2500	2160	0.929213	0.894415		-13.6	30
Perfluorododecanoic acid (PFDoA)	A	2500	2350	0.9361562	0.9402406		-6.0	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2260	3.93233	3.952277		1.8	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2630	0.4568315	0.5165034		10.4	30
N-EtFOSAA	A	2500	2370	0.9836556	0.9454209		-5.3	30
N-MeFOSAA	A	2500	2280	1.027301	1.04137		-8.8	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2430	0.8542676	0.9234345		-3.0	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2480	1.009812	1.119939		-0.7	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2440	0.6287667	0.6575115		1.3	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2600	1.061084	1.276981		10.9	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2360	0.8334166	0.8681399		-5.5	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2400	0.319818	0.3233953		-0.06	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2770	0.3462983	0.3716528		11.0	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2420	0.3044628	0.3192537		-3.1	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2270	0.9652933	1.03158		-0.3	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2670	0.495495	0.5332471		6.9	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2640	0.5879048	0.6247573		5.7	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2520	1.004025	1.14429		6.0	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2290	0.9760894	1.058119		-2.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2540	0.8528971	0.9504971		1.5	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2720	0.3237613	0.3575407		8.6	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2530	0.9139933	0.9357188		1.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2670	0.8653288	0.9372367		6.9	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	0.9382121	0.9765217		-2.6	30
Perfluorononanoic acid (PFNA)	A	2500	2340	0.938444	0.9075274		-6.3	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-466 PFAS

S065227-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	450	0.8628989	0.8489657		-10.1	30
Perfluorobutanesulfonic acid (PFBS)	A	444	405	0.9900012	0.9656811		-8.8	30
Perfluoropentanoic acid (PFPeA)	A	500	443	0.9353824	0.9067352		-11.3	30
Perfluorohexanoic acid (PFHxA)	A	500	436	0.86678	0.8404228		-12.7	30
11Cl-PF3OUdS (F53B Minor)	A	472	438	1.835659	1.72255		-7.3	30
9Cl-PF3ONS (F53B Major)	A	466	482	3.897292	4.025215		3.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	447	1.602632	1.605774		-5.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	352	2.979159	0.1023471		-29.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	504	0.7665044	0.8972762		5.1	30
Perfluorodecanoic acid (PFDA)	A	500	458	0.929213	0.9496842		-8.3	30
Perfluorododecanoic acid (PFDoA)	A	500	435	0.9361562	0.8696535		-13.1	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	431	3.93233	3.727938		-3.2	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	520	0.4568315	0.5108367		9.2	30
N-EtFOSAA	A	500	430	0.9836556	0.8555917		-13.9	30
N-MeFOSAA	A	500	457	1.027301	1.04289		-8.6	30
Perfluorotetradecanoic acid (PFTA)	A	500	453	0.8542676	0.868046		-9.4	30
Perfluorotridecanoic acid (PFTrDA)	A	500	449	1.009812	1.021105		-10.2	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	457	1.061084	1.137973		-2.3	30
Perfluorodecanesulfonic acid (PFDS)	A	482	495	0.6287667	0.6661969		2.6	30
Perfluorooctanesulfonamide (FOSA)	A	500	476	0.8334166	0.8758551		-4.7	30
Perfluorononanesulfonic acid (PFNS)	A	481	479	0.319818	0.3223431		-0.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	478	0.3462983	0.3157572		-4.4	30
Perfluoro-1-butanesulfonamide (FBSA)	A	500	442	0.3044628	0.2916464		-11.5	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	468	0.9652933	1.058429		2.3	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	484	0.495495	0.4789839		-3.3	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	486	0.5879048	0.5703637		-2.8	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	435	1.004025	0.9984949		-8.6	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	392	0.9760894	0.9038583		-16.6	30
Perfluoroundecanoic acid (PFUnA)	A	500	444	0.8528971	0.8321599		-11.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	486	0.3237613	0.3176499		-2.9	30
Perfluoroheptanoic acid (PFHpA)	A	500	501	0.9139933	0.918039		0.1	30
Perfluorooctanoic acid (PFOA)	A	500	507	0.8653288	0.8815278		1.4	30
Perfluorooctanesulfonic acid (PFOS)	A	464	485	0.9382121	1.048587		4.6	30
Perfluorononanoic acid (PFNA)	A	500	478	0.938444	0.9234035		-4.3	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065227-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2280	0.8628989	0.8618408		-8.7	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2140	0.9900012	1.018693		-3.8	30
Perfluoropentanoic acid (PFPeA)	A	2500	2310	0.9353824	0.9432757		-7.8	30
Perfluorohexanoic acid (PFHxA)	A	2500	2260	0.86678	0.8716131		-9.5	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2400	1.835659	1.907195		1.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2280	3.897292	3.837298		-2.3	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2310	1.602632	1.659407		-2.2	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2080	2.979159	0.1219468		-16.8	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2640	0.7665044	0.927793		9.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2130	0.929213	0.8807296		-15.0	30
Perfluorododecanoic acid (PFDoA)	A	2500	2330	0.9361562	0.9308634		-7.0	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2210	3.93233	3.859621		-0.6	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2360	0.4568315	0.4644542		-0.8	30
N-EtFOSAA	A	2500	2130	0.9836556	0.8500816		-14.8	30
N-MeFOSAA	A	2500	2420	1.027301	1.106771		-3.1	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2500	0.8542676	0.9497799		-0.2	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2320	1.009812	1.048471		-7.1	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2340	0.6287667	0.630669		-2.8	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2400	1.061084	1.18086		2.5	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2180	0.8334166	0.7998474		-13.0	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2480	0.319818	0.3338849		3.2	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2700	0.3462983	0.3612544		7.9	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2380	0.3044628	0.3133032		-4.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2250	0.9652933	1.021989		-1.2	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2530	0.495495	0.5055786		1.4	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2520	0.5879048	0.5947084		0.7	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2710	1.004025	1.229334		14.0	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2140	0.9760894	0.9880106		-8.9	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2400	0.8528971	0.8972853		-4.2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2520	0.3237613	0.331833		0.9	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2390	0.9139933	0.8814377		-4.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2630	0.8653288	0.9226045		5.3	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2200	0.9382121	0.9489291		-5.3	30
Perfluorononanoic acid (PFNA)	A	2500	2410	0.938444	0.9321201		-3.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065227-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2280	0.8628989	0.8627174		-8.6	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2120	0.9900012	1.009674		-4.7	30
Perfluoropentanoic acid (PFPeA)	A	2500	2300	0.9353824	0.9396125		-8.1	30
Perfluorohexanoic acid (PFHxA)	A	2500	2290	0.86678	0.8807092		-8.5	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2490	1.835659	1.980942		5.7	30
9Cl-PF3ONS (F53B Major)	A	2330	2360	3.897292	3.985572		1.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2300	1.602632	1.651563		-2.6	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2280	2.979159	0.1339799		-8.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2580	0.7665044	0.9063477		7.3	30
Perfluorodecanoic acid (PFDA)	A	2500	2150	0.929213	0.8915286		-13.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2300	0.9361562	0.9185763		-8.2	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2230	3.93233	3.904836		0.5	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2530	0.4568315	0.4978434		6.4	30
N-EtFOSAA	A	2500	2330	0.9836556	0.930092		-6.9	30
N-MeFOSAA	A	2500	2490	1.027301	1.137612		-0.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2320	0.8542676	0.8827306		-7.3	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2240	1.009812	1.011825		-10.3	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2520	1.061084	1.239847		7.7	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2540	0.6287667	0.6851027		5.5	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2320	0.8334166	0.8529206		-7.2	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2590	0.319818	0.3485505		7.7	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2680	0.3462983	0.3586661		7.1	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2470	0.3044628	0.325184		-1.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2150	0.9652933	0.9774449		-5.5	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2560	0.495495	0.5097064		2.2	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2510	0.5879048	0.5927361		0.4	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2510	1.004025	1.139366		5.5	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2020	0.9760894	0.9342668		-13.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2370	0.8528971	0.8885365		-5.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2560	0.3237613	0.3372505		2.5	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2510	0.9139933	0.928189		0.6	30
Perfluorooctanoic acid (PFOA)	A	2500	2520	0.8653288	0.8813973		0.6	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2390	0.9382121	1.03376		3.1	30
Perfluorononanoic acid (PFNA)	A	2500	2470	0.938444	0.9576319		-1.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-466 PFAS

S065227-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2300	0.8628989	0.8686579		-8.0	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2150	0.9900012	1.024446		-3.3	30
Perfluoropentanoic acid (PFPeA)	A	2500	2290	0.9353824	0.9378871		-8.3	30
Perfluorohexanoic acid (PFHxA)	A	2500	2230	0.86678	0.8576055		-10.9	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2550	1.835659	2.029106		8.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2470	3.897292	4.164699		5.9	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2180	1.602632	1.56709		-7.6	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2430	2.979159	0.1428931		-2.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2620	0.7665044	0.9229413		9.3	30
Perfluorodecanoic acid (PFDA)	A	2500	2040	0.929213	0.8449366		-18.4	30
Perfluorododecanoic acid (PFDoA)	A	2500	2430	0.9361562	0.9731098		-2.7	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2240	3.93233	3.910779		0.7	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2610	0.4568315	0.5133596		9.7	30
N-EtFOSAA	A	2500	2460	0.9836556	0.9846493		-1.4	30
N-MeFOSAA	A	2500	2230	1.027301	1.016687		-10.9	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2370	0.8542676	0.9031416		-5.1	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2410	1.009812	1.08576		-3.7	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2390	0.6287667	0.6439266		-0.8	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2380	1.061084	1.173226		1.8	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2290	0.8334166	0.8408944		-8.5	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2670	0.319818	0.3605046		11.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2670	0.3462983	0.357133		6.7	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2410	0.3044628	0.3177454		-3.6	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2270	0.9652933	1.029951		-0.4	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2540	0.495495	0.5056773		1.4	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2510	0.5879048	0.5923859		0.3	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2550	1.004025	1.154091		6.9	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2220	0.9760894	1.023935		-5.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2320	0.8528971	0.8700407		-7.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2580	0.3237613	0.3401819		3.4	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2500	0.9139933	0.9242896		0.2	30
Perfluorooctanoic acid (PFOA)	A	2500	2550	0.8653288	0.8934024		2.0	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2280	0.9382121	0.986571		-1.6	30
Perfluorononanoic acid (PFNA)	A	2500	2260	0.938444	0.8753864		-9.6	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065278-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	449	0.8628989	0.848643		-10.1	30
Perfluorobutanesulfonic acid (PFBS)	A	444	424	0.9900012	1.012017		-4.4	30
Perfluoropentanoic acid (PFPeA)	A	500	432	0.9353824	0.8837209		-13.6	30
Perfluorohexanoic acid (PFHxA)	A	500	438	0.86678	0.8432275		-12.4	30
11Cl-PF3OUdS (F53B Minor)	A	472	448	1.835659	1.763132		-5.1	30
9Cl-PF3ONS (F53B Major)	A	466	509	3.897292	4.256666		9.3	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	428	1.602632	1.537735		-9.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	501	2.979159	0.1459983		0.3	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	455	0.7665044	0.8104586		-5.1	30
Perfluorodecanoic acid (PFDA)	A	500	436	0.929213	0.9038259		-12.7	30
Perfluorododecanoic acid (PFDoA)	A	500	423	0.9361562	0.8459062		-15.5	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	429	3.93233	3.7137		-3.6	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	525	0.4568315	0.5157542		10.3	30
N-EtFOSAA	A	500	414	0.9836556	0.822905		-17.2	30
N-MeFOSAA	A	500	444	1.027301	1.01487		-11.1	30
Perfluorotetradecanoic acid (PFTA)	A	500	483	0.8542676	0.926149		-3.3	30
Perfluorotridecanoic acid (PFTrDA)	A	500	479	1.009812	1.088363		-4.2	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	448	1.061084	1.115432		-4.2	30
Perfluorodecanesulfonic acid (PFDS)	A	482	463	0.6287667	0.6234222		-4.0	30
Perfluorooctanesulfonamide (FOSA)	A	500	457	0.8334166	0.8407193		-8.5	30
Perfluorononanesulfonic acid (PFNS)	A	481	444	0.319818	0.2987955		-7.7	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	493	0.3462983	0.3256941		-1.4	30
Perfluoro-1-butanefulfonamide (FBSA)	A	500	438	0.3044628	0.2885749		-12.5	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	423	0.9652933	0.9566208		-7.5	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	490	0.495495	0.4850967		-2.1	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	485	0.5879048	0.5688902		-3.1	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	451	1.004025	1.034616		-5.3	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	416	0.9760894	0.9592807		-11.5	30
Perfluoroundecanoic acid (PFUnA)	A	500	435	0.8528971	0.8151328		-13.0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	475	0.3237613	0.3108248		-5.0	30
Perfluoroheptanoic acid (PFHpA)	A	500	495	0.9139933	0.9084594		-0.9	30
Perfluorooctanoic acid (PFOA)	A	500	526	0.8653288	0.9136823		5.1	30
Perfluorooctanesulfonic acid (PFOS)	A	464	450	0.9382121	0.9715991		-3.1	30
Perfluorononanoic acid (PFNA)	A	500	473	0.938444	0.9137429		-5.3	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065278-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2270	0.8628989	0.8569449		-9.3	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2140	0.9900012	1.022381		-3.5	30
Perfluoropentanoic acid (PFPeA)	A	2500	2280	0.9353824	0.9326159		-8.8	30
Perfluorohexanoic acid (PFHxA)	A	2500	2230	0.86678	0.8592741		-10.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2430	1.835659	1.925459		2.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2230	3.897292	3.759747		-4.3	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2130	1.602632	1.530667		-9.8	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2210	2.979159	0.1296761		-11.5	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2310	0.7665044	0.8134445		-3.8	30
Perfluorodecanoic acid (PFDA)	A	2500	2120	0.929213	0.8782043		-15.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2320	0.9361562	0.9294003		-7.1	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2180	3.93233	3.818383		-1.7	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2540	0.4568315	0.5001821		6.9	30
N-EtFOSAA	A	2500	2360	0.9836556	0.9423621		-5.6	30
N-MeFOSAA	A	2500	2240	1.027301	1.024708		-10.2	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2380	0.8542676	0.90764		-4.7	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2380	1.009812	1.072982		-4.9	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2460	1.061084	1.211541		5.2	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2190	0.6287667	0.5895091		-9.2	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2260	0.8334166	0.8290979		-9.8	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2490	0.319818	0.3363633		3.9	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2570	0.3462983	0.3445535		3.0	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2320	0.3044628	0.3061642		-7.1	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2050	0.9652933	0.930524		-10.0	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2540	0.495495	0.5064435		1.6	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2530	0.5879048	0.5985496		1.3	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2670	1.004025	1.212122		12.4	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2120	0.9760894	0.9767056		-9.9	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2310	0.8528971	0.8637737		-7.8	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2600	0.3237613	0.3423758		4.0	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2430	0.9139933	0.8971193		-2.8	30
Perfluorooctanoic acid (PFOA)	A	2500	2620	0.8653288	0.9187646		4.8	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2250	0.9382121	0.973162		-2.9	30
Perfluorononanoic acid (PFNA)	A	2500	2350	0.938444	0.9107697		-6.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065278-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2280	0.8628989	0.8619372		-8.7	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2120	0.9900012	1.011174		-4.5	30
Perfluoropentanoic acid (PFPeA)	A	2500	2260	0.9353824	0.9232235		-9.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2240	0.86678	0.8642552		-10.2	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2520	1.835659	2.000097		6.7	30
9Cl-PF3ONS (F53B Major)	A	2330	2380	3.897292	4.021682		2.3	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2230	1.602632	1.599671		-5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2160	2.979159	0.1263908		-13.8	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2800	0.7665044	0.9830481		16.6	30
Perfluorodecanoic acid (PFDA)	A	2500	2370	0.929213	0.9806832		-5.3	30
Perfluorododecanoic acid (PFDoA)	A	2500	2340	0.9361562	0.9354149		-6.5	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2190	3.93233	3.82893		-1.4	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2810	0.4568315	0.5520193		17.9	30
N-EtFOSAA	A	2500	2450	0.9836556	0.9799076		-1.9	30
N-MeFOSAA	A	2500	2580	1.027301	1.177047		3.1	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2420	0.8542676	0.9232697		-3.0	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2360	1.009812	1.065835		-5.5	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2230	0.6287667	0.60123		-7.4	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2440	1.061084	1.199532		4.1	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2150	0.8334166	0.7911697		-13.9	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2580	0.319818	0.3481062		7.6	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2460	0.3462983	0.3285168		-1.7	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2380	0.3044628	0.3144296		-4.6	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2230	0.9652933	1.013289		-2.0	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2520	0.495495	0.5027163		0.8	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2510	0.5879048	0.5918561		0.2	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2450	1.004025	1.112685		3.0	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2260	0.9760894	1.044986		-3.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2190	0.8528971	0.8206592		-12.4	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2570	0.3237613	0.3383467		2.8	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2430	0.9139933	0.8959485		-2.9	30
Perfluorooctanoic acid (PFOA)	A	2500	2400	0.8653288	0.8417851		-3.9	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2230	0.9382121	0.9642973		-3.8	30
Perfluorononanoic acid (PFNA)	A	2500	2320	0.938444	0.9008829		-7.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065278-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2290	0.8628989	0.863806		-8.5	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2140	0.9900012	1.019355		-3.7	30
Perfluoropentanoic acid (PFPeA)	A	2500	2290	0.9353824	0.9388056		-8.2	30
Perfluorohexanoic acid (PFHxA)	A	2500	2280	0.86678	0.8783137		-8.8	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2530	1.835659	2.012635		7.4	30
9Cl-PF3ONS (F53B Major)	A	2330	2410	3.897292	4.074062		3.6	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2150	1.602632	1.548259		-8.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2340	2.979159	0.1374249		-6.3	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2540	0.7665044	0.8945817		5.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2310	0.929213	0.9580796		-7.5	30
Perfluorododecanoic acid (PFDoA)	A	2500	2360	0.9361562	0.9462964		-5.4	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2190	3.93233	3.823468		-1.5	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2540	0.4568315	0.4985244		6.5	30
N-EtFOSAA	A	2500	2390	0.9836556	0.9566018		-4.2	30
N-MeFOSAA	A	2500	2390	1.027301	1.090917		-4.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2340	0.8542676	0.8924961		-6.3	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2250	1.009812	1.01365		-10.2	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2270	0.6287667	0.6114191		-5.8	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2350	1.061084	1.15856		0.5	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2230	0.8334166	0.8180547		-11.0	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2590	0.319818	0.348836		7.8	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2530	0.3462983	0.3378905		1.0	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2380	0.3044628	0.3142952		-4.6	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2180	0.9652933	0.9911336		-4.2	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2530	0.495495	0.5045233		1.2	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2500	0.5879048	0.5914126		0.1	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2260	1.004025	1.025661		-5.1	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2200	0.9760894	1.014011		-6.5	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2390	0.8528971	0.8963776		-4.3	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2620	0.3237613	0.3442339		4.6	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2390	0.9139933	0.8831702		-4.3	30
Perfluorooctanoic acid (PFOA)	A	2500	2500	0.8653288	0.874566		-0.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	0.9382121	0.9755663		-2.7	30
Perfluorononanoic acid (PFNA)	A	2500	2420	0.938444	0.9364634		-3.3	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065402-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2570	0.9425179	1.011857		2.7	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2310	1.102869	1.175854		4.2	30
Perfluoropentanoic acid (PFPeA)	A	2500	2590	0.9976624	1.078183		3.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2610	0.9419225	1.032034		4.2	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2670	1.989388	2.284809		13.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2890	4.109336	4.697106		24.2	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2400	1.848187	1.962565		1.8	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2540	0.1671191	0.1714838		1.4	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2480	0.8882675	0.9869106		3.4	30
Perfluorodecanoic acid (PFDA)	A	2500	2470	1.018422	1.090713		-1.3	30
Perfluorododecanoic acid (PFDoA)	A	2500	2630	1.020538	1.124969		5.2	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2360	4.320325	4.516334		6.2	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2480	0.4851688	0.5342313		4.4	30
N-EtFOSAA	A	2500	2480	1.041633	1.051849		-0.7	30
N-MeFOSAA	A	2500	2800	1.161219	1.332719		12.2	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2460	0.9728168	1.046993		-1.8	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2330	1.116887	1.194674		-6.9	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2570	1.197741	1.431409		10.0	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2810	0.7418148	0.8124729		16.7	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2490	0.9174711	0.9757214		-0.5	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2910	0.344215	0.3973688		21.2	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2520	0.3814328	0.3945368		1.0	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2710	0.3389618	0.3771353		8.5	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2480	1.118146	1.25817		8.9	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2630	0.5740932	0.6113184		5.4	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2630	0.6683914	0.7138265		5.1	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2850	1.148433	1.479325		19.9	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2360	1.102015	1.20024		0.6	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2550	0.9600985	1.031645		2.0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2650	0.3650421	0.396832		6.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2570	1.016118	1.0509		2.9	30
Perfluorooctanoic acid (PFOA)	A	2500	2620	0.9817944	1.026899		4.6	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2510	1.026673	1.141418		8.2	30
Perfluorononanoic acid (PFNA)	A	2500	2500	1.065202	1.104545		0.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065402-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	446	0.9425179	0.8789602		-10.8	30
Perfluorobutanesulfonic acid (PFBS)	A	444	402	1.102869	1.022925		-9.4	30
Perfluoropentanoic acid (PFPeA)	A	500	435	0.9976624	0.9074633		-12.9	30
Perfluorohexanoic acid (PFHxA)	A	500	449	0.9419225	0.8895279		-10.2	30
11Cl-PF3OUdS (F53B Minor)	A	472	504	1.989388	2.149439		6.9	30
9Cl-PF3ONS (F53B Major)	A	466	461	4.109336	3.690343		-1.2	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	413	1.848187	1.687261		-12.4	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	460	0.1671191	0.1556009		-8.0	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	440	0.8882675	0.8879173		-8.3	30
Perfluorodecanoic acid (PFDA)	A	500	420	1.018422	0.9281777		-16.0	30
Perfluorododecanoic acid (PFDoA)	A	500	479	1.020538	1.024659		-4.1	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	419	4.320325	3.974917		-5.8	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	416	0.4851688	0.4488362		-12.5	30
N-EtFOSAA	A	500	506	1.041633	1.070729		1.2	30
N-MeFOSAA	A	500	444	1.161219	1.055627		-11.2	30
Perfluorotetradecanoic acid (PFTA)	A	500	417	0.9728168	0.8937684		-16.6	30
Perfluorotridecanoic acid (PFTrDA)	A	500	414	1.116887	1.072322		-17.1	30
Perfluorodecanesulfonic acid (PFDS)	A	482	457	0.7418148	0.6594825		-5.2	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	427	1.197741	1.207059		-8.7	30
Perfluorooctanesulfonamide (FOSA)	A	500	431	0.9174711	0.8448865		-13.9	30
Perfluorononanesulfonic acid (PFNS)	A	481	474	0.344215	0.3232718		-1.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	457	0.3814328	0.3555244		-8.7	30
Perfluoro-1-butanesulfonamide (FBSA)	A	500	446	0.3389618	0.3101889		-10.8	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	412	1.118146	1.04135		-9.8	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	444	0.5740932	0.5126891		-11.2	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	447	0.6683914	0.6048896		-10.6	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	410	1.148433	1.081922		-13.9	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	387	1.102015	0.9826578		-17.7	30
Perfluoroundecanoic acid (PFUnA)	A	500	443	0.9600985	0.8955856		-11.5	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	443	0.3650421	0.3302945		-11.4	30
Perfluoroheptanoic acid (PFHpA)	A	500	472	1.016118	0.9595584		-5.6	30
Perfluorooctanoic acid (PFOA)	A	500	424	0.9817944	0.828537		-15.3	30
Perfluorooctanesulfonic acid (PFOS)	A	464	395	1.026673	0.8973727		-14.9	30
Perfluorononanoic acid (PFNA)	A	500	411	1.065202	0.9036428		-17.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-466 PFAS

S065402-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2530	0.9425179	0.9977771		1.2	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2360	1.102869	1.200694		6.4	30
Perfluoropentanoic acid (PFPeA)	A	2500	2610	0.9976624	1.089428		4.5	30
Perfluorohexanoic acid (PFHxA)	A	2500	2540	0.9419225	1.007325		1.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2570	1.989388	2.193781		8.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2680	4.109336	4.351819		15.2	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2330	1.848187	1.898803		-1.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2620	0.1671191	0.1769447		4.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2940	0.8882675	1.167213		22.7	30
Perfluorodecanoic acid (PFDA)	A	2500	2450	1.018422	1.080597		-2.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2570	1.020538	1.098246		2.7	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2440	4.320325	4.685802		10.1	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2560	0.4851688	0.5513349		7.7	30
N-EtFOSAA	A	2500	2540	1.041633	1.077962		1.7	30
N-MeFOSAA	A	2500	2520	1.161219	1.198943		0.9	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2380	0.9728168	1.015122		-4.8	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2580	1.116887	1.321682		3.1	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2960	0.7418148	0.8545083		22.8	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2480	1.197741	1.381802		6.1	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2360	0.9174711	0.9252214		-5.7	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2530	0.344215	0.3454506		5.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2620	0.3814328	0.410242		5.0	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2680	0.3389618	0.3730186		7.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2240	1.118146	1.134301		-1.8	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2600	0.5740932	0.602609		3.9	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2600	0.6683914	0.7054736		3.9	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2460	1.148433	1.278571		3.3	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2220	1.102015	1.129944		-5.3	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2540	0.9600985	1.026172		1.4	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2660	0.3650421	0.3976419		6.3	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2580	1.016118	1.052481		3.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2600	0.9817944	1.019889		3.9	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2340	1.026673	1.065314		1.0	30
Perfluorononanoic acid (PFNA)	A	2500	2580	1.065202	1.135928		3.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-466 PFAS

S065402-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2560	0.9425179	1.009928		2.5	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2360	1.102869	1.200238		6.3	30
Perfluoropentanoic acid (PFPeA)	A	2500	2580	0.9976624	1.077524		3.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2540	0.9419225	1.006907		1.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2670	1.989388	2.27877		13.0	30
9Cl-PF3ONS (F53B Major)	A	2330	2620	4.109336	4.243458		12.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2260	1.848187	1.848178		-4.1	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2500	0.1671191	0.169153		0.03	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2860	0.8882675	1.136286		19.3	30
Perfluorodecanoic acid (PFDA)	A	2500	2370	1.018422	1.046007		-5.3	30
Perfluorododecanoic acid (PFDoA)	A	2500	2680	1.020538	1.147235		7.3	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2410	4.320325	4.610632		8.4	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2470	0.4851688	0.5302567		3.6	30
N-EtFOSAA	A	2500	3050	1.041633	1.294824		22.1	30
N-MeFOSAA	A	2500	2720	1.161219	1.291607		8.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2480	0.9728168	1.058837		-0.7	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2610	1.116887	1.340955		4.6	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2490	1.197741	1.383167		6.2	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2810	0.7418148	0.8109223		16.5	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2460	0.9174711	0.9641574		-1.7	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2860	0.344215	0.3914161		19.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2400	0.3814328	0.3750717		-4.0	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2670	0.3389618	0.3708676		6.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2230	1.118146	1.131498		-2.0	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2590	0.5740932	0.6010995		3.6	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2570	0.6683914	0.6991464		3.0	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2780	1.148433	1.440807		16.7	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2330	1.102015	1.181506		-1.0	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2550	0.9600985	1.0338		2.2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2590	0.3650421	0.3873781		3.6	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2650	1.016118	1.083714		6.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2580	0.9817944	1.011524		3.0	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2440	1.026673	1.1092		5.2	30
Perfluorononanoic acid (PFNA)	A	2500	2520	1.065202	1.112442		0.9	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SOP-454 PFAS in Water	
Perfluorobutanoic acid (PFBA)	NH-P
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluoropentanoic acid (PFPeA)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
11Cl-PF3OUdS (F53B Minor)	NH-P
9Cl-PF3ONS (F53B Major)	NH-P
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P
8:2 Fluorotelomersulfonic acid (8:2FTS A)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	NH-P
Perfluoroheptanesulfonic acid (PFHpS)	NH-P
N-EtFOSAA	NH-P
N-MeFOSAA	NH-P
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
4:2 Fluorotelomersulfonic acid (4:2FTS A)	NH-P
Perfluorodecanesulfonic acid (PFDS)	NH-P
Perfluorooctanesulfonamide (FOSA)	NH-P
Perfluorononanesulfonic acid (PFNS)	NH-P
Perfluoro-1-hexanesulfonamide (FHxSA)	NH-P
Perfluoro-1-butanesulfonamide (FBSA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
Perfluoro-4-oxapentanoic acid (PFMPA)	NH-P
Perfluoro-5-oxahexanoic acid (PFMBA)	NH-P
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P
Perfluoropetanesulfonic acid (PFPeS)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P
SOP-466 PFAS in Soil	
Perfluorobutanoic acid (PFBA)	NH-P
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluoropentanoic acid (PFPeA)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
11Cl-PF3OUdS (F53B Minor)	NH-P
9Cl-PF3ONS (F53B Major)	NH-P
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P
8:2 Fluorotelomersulfonic acid (8:2FTS A)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P

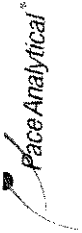
CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SOP-466 PFAS in Soil</i>	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	NH-P
Perfluoroheptanesulfonic acid (PFHpS)	NH-P
N-EtFOSAA	NH-P
N-MeFOSAA	NH-P
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
4:2 Fluorotelomersulfonic acid (4:2FTS A)	NH-P
Perfluorodecanesulfonic acid (PFDS)	NH-P
Perfluorooctanesulfonamide (FOSA)	NH-P
Perfluorononanesulfonic acid (PFNS)	NH-P
Perfluoro-1-hexanesulfonamide (FHxSA)	NH-P
Perfluoro-1-butanefulfonamide (FBSA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
Perfluoro-4-oxapentanoic acid (PFMPA)	NH-P
Perfluoro-5-oxahexanoic acid (PFMBA)	NH-P
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P
Perfluoropetanesulfonic acid (PFPeS)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022



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Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
Tighe & Bond
120 Front Street, Worcester, MA 01610
Phone: 508-754-2201
Princeton Soil Sampling - 30 Mountain
Princeton, MA
Project Manager: Jeff Arps/Michael Scherer
P-0534017
Pace Analytical Quote Name/Number
Invoice Recipient:
Sampled By: M Scherer

217 1956

Doc # 381 Rev 4_01/08/2020

CHAIN OF CUSTODY RECORD
1800 Elm Street SE
Minneapolis, MN 55414

Page 1 of 2

ANALYSIS REQUESTED

Pace Analytical Work Order #	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc. Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	PFAS (isotope dilution method)
1	30MTN S-2 (6-12)	10/28/21	0800	GRAB	S	U						X
2	30MTN S-3 (6-12)		0830				1					X
3	30MTN S-3 (12-24)		0830				1					X
4	30MTN S-4 (6-12)		0900				1					X
5	30MTN S-5 (6-12)		0930				1					X
6	30MTN S-5 (12-24)		0930				1					X
7	30MTN S-7 (0-12)		1000				1					X
8	30MTN S-8 (0-12)		1030				1					X
9	30MTN S-9 (0-12)		1100				1					X
10	30MTN S-10 (0-12)		1130				1					X
11	30MTN S-11 (0-12)		1200				1					X
12	30MTN S-11 (24-36)		1200				1					X

Client Comments:

Retinquired by: (signature) *[Signature]* Date/Time: 10/29/21 1200
 Received by: (signature) *[Signature]* Date/Time: 10/29/21 1815
 Retinquired by: (signature) *[Signature]* Date/Time: 10/29/21 2035
 Received by: (signature) *[Signature]* Date/Time: 10/29/21 2035
 Retinquired by: (signature) *[Signature]* Date/Time:
 Received by: (signature) *[Signature]* Date/Time:
 Retinquired by: (signature) *[Signature]* Date/Time:
 Received by: (signature) *[Signature]* Date/Time:
 Comments:

Special Requirements

IAA MCP Required IAA MCP Certification Form Required
 ACP Certification Form Required CT RCP Required
 RCP Certification Form Required IAA State DW Required

Project Entity

Government Municipality WRTA
 Federal 21 J School MBTA
 City Brownfield

Other

Chromatogram AHA-LAP, LLC

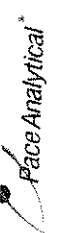
Please use the following codes to indicate possible sample concentration within the Conc Code column above:
 H - High, M - Medium, L - Low, C - Clean, U - Unknown

Preservation Codes:
 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

Preservation Codes:
 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.



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CHAIN OF CUSTODY RECORD

21019156

Doc # 381 Rev 4_01/06/2020

Page 2 of 2

Address: 120 Front Street, Worcester, MA 01610
 Phone: 508-754-2201
 Project Location: Princeton, MA
 Project Number: P-0534017
 Project Manager: Jeff Aips/Michael Scherer
 Invoice Recipient: Tighe & Bond
 Sampled By: M Scherer

7-Day PFAS 10-Day (std) 10-Day Field Filtered Lab to Filter
 1-Day 3-Day 4-Day Field Filtered Lab to Filter
 Format: PDF EXCEL
 Other: SOXHLET
 CLP Like Data Pkg Required:
 Email To: mischere@michaelbond.com
 Fax To #:

ANALYSIS REQUESTED

Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/OPAB	Matrix Code	Conc. Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
30MTN S-12 (0-12)	12:30	12:30	GRAB	S	U					X
30MTN S-12 (12-24)	13:00	13:00								X
30MTN S-13 (12-24)	13:00	13:00								X
30MTN S-14 (0-12)	13:30	13:30								X
30MTN S-14 (12-24)	13:30	13:30								X
30MTN S-15 (0-12)	14:00	14:00								X
30MTN S-15 (12-24)	14:00	14:00								X
30MTN S-16 (0-12)	14:30	14:30								X
RINSATE	08:00									X
TRIP BLANK										X
FIELD BLANK										X
EQUIPMENT BLANK										X

Retinquired by (signature): [Signature]
 Date/Time: 10/29/21
 Received by (signature): [Signature]
 Date/Time: 10/29/21
 Retinquired by (signature): [Signature]
 Date/Time: 10/29/21
 Received by (signature): [Signature]
 Date/Time: 10/29/21
 Retinquired by (signature): [Signature]
 Date/Time: 10/29/21
 Received by (signature): [Signature]
 Date/Time: 10/29/21

Client Comments:
 MA MCP Required
 MCP Certification Form Required
 CT RCP Required
 RCP Certification Form Required
 MA State DW Required
 PWSID #

Project Entity:
 Government Municipality WRTA Other
 Federal City 21 J School Chromatogram
 City Brownfield MBTA AHA-LAP, LLC

1 Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

2 Preservation Codes:
 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T & B

Received By MA Date 10/29/11 Time 2035

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 3.0
By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? MA Were Samples Tampered with? MA
Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client T Analysis T Sampler Name T
Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F

Are there Rushes? F

Are there Short Holds? F

Is there enough Volume? T

Is there Headspace where applicable? MA

Proper Media/Containers Used? T

Were trip blanks received? T

Do all samples have the proper pH? MA

Who was notified? _____

Who was notified? _____

Who was notified? _____

MS/MSD? F

Is splitting samples required? F

On COC? T

Acid _____ Base _____

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

November 16, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

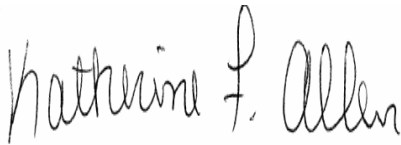
Project Location: 54 Mountain, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1975

Enclosed are results of analyses for samples as received by the laboratory on October 29, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian

Tighe & Bond, Inc. - Worcester
 120 Front St.
 Worcester, MA 01608-2303
 ATTN: Michael Scherer

REPORT DATE: 11/16/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1975

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 54 Mountain, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
54MTN S-5A (0-12)	21J1975-01	Soil		SM 2540G SOP-466 PFAS	
54MTN S-6 (6-12)	21J1975-02	Soil		SM 2540G SOP-466 PFAS	
54MTN S-7 (0-12)	21J1975-03	Soil		SM 2540G SOP-466 PFAS	
54MTN S-7 (12-24)	21J1975-04	Soil		SM 2540G SOP-466 PFAS	
54MTN S-8 (0-12)	21J1975-05	Soil		SM 2540G SOP-466 PFAS	
54MTN S-9 (0-12)	21J1975-06	Soil		SM 2540G SOP-466 PFAS	
54MTN S-9 (12-24)	21J1975-07	Soil		SM 2540G SOP-466 PFAS	
54MTN S-10 (0-12)	21J1975-08	Soil		SM 2540G SOP-466 PFAS	
54MTN S-10 (12-24)	21J1975-09	Soil		SM 2540G SOP-466 PFAS	
54MTN S-11 (0-12)	21J1975-10	Soil		SM 2540G SOP-466 PFAS	
54MTN S-11 (12-24)	21J1975-11	Soil		SM 2540G SOP-466 PFAS	
54MTN S-12 (0-12)	21J1975-12	Soil		SM 2540G SOP-466 PFAS	
54MTN S-13 (0-12)	21J1975-14	Soil		SM 2540G SOP-466 PFAS	
54MTN S-13 (12-24)	21J1975-15	Soil		SM 2540G SOP-466 PFAS	
54MTN S-14 (0-6)	21J1975-16	Soil		SM 2540G SOP-466 PFAS	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SOP-466 PFAS

Qualifications:

Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is within method specified criteria.

Analyte & Samples(s) Qualified:

Perfluorononanesulfonic acid (PFNS)

B294103-MS1

Extracted Internal Standard recovery is outside of control limits. Data is not significantly affected since associated analyte is not detected and bias is on the high side.

Analyte & Samples(s) Qualified:

M2-8:2FTS

21J1975-01[54MTN S-5A (0-12)], 21J1975-02[54MTN S-6 (6-12)], 21J1975-03[54MTN S-7 (0-12)], 21J1975-04[54MTN S-7 (12-24)], 21J1975-05[54MTN S-8 (0-12)], 21J1975-06[54MTN S-9 (0-12)], 21J1975-07[54MTN S-9 (12-24)], 21J1975-09[54MTN S-10 (12-24)], 21J1975-10[54MTN S-11 (0-12)], 21J1975-11[54MTN S-11 (12-24)], 21J1975-14[54MTN S-13 (0-12)], 21J1975-15[54MTN S-13 (12-24)]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Technical Representative

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-5A (0-12)

Sampled: 10/28/2021 12:00

Sample ID: 21J1975-01

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.48	0.063	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluorobutanesulfonic acid (PFBS)	0.31	0.48	0.073	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluoropentanoic acid (PFPeA)	0.12	0.48	0.073	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluorohexanoic acid (PFHxA)	0.15	0.48	0.089	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.48	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
9Cl-PF3ONS (F53B Major)	ND	0.48	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.48	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.48	0.23	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.48	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluorodecanoic acid (PFDA)	0.083	0.48	0.061	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.48	0.073	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.48	0.078	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.48	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
N-EtFOSAA	ND	0.48	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
N-MeFOSAA	ND	0.48	0.087	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.48	0.091	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.48	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.48	0.088	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.48	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.48	0.093	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.48	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.48	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.48	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.48	0.076	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.48	0.090	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.48	0.088	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.48	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.48	0.070	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.48	0.087	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.48	0.074	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluoroheptanoic acid (PFHpA)	0.11	0.48	0.069	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluorooctanoic acid (PFOA)	0.23	0.48	0.14	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluorooctanesulfonic acid (PFOS)	0.71	0.48	0.064	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH
Perfluorononanoic acid (PFNA)	ND	0.48	0.078	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:09	BLH

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-5A (0-12)

Sampled: 10/28/2021 12:00

Sample ID: 21J1975-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	79.7		% Wt	1		SM 2540G	11/11/21	11/12/21 9:13	WT

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-6 (6-12)

Sampled: 10/28/2021 12:30

Sample ID: 21J1975-02

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.31	0.55	0.073	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.55	0.084	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluoropentanoic acid (PFPeA)	0.57	0.55	0.084	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluorohexanoic acid (PFHxA)	0.42	0.55	0.10	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.55	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
9Cl-PF3ONS (F53B Major)	ND	0.55	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.55	0.18	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.55	0.26	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.55	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluorodecanoic acid (PFDA)	1.5	0.55	0.071	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.55	0.084	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.55	0.090	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.55	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
N-EtFOSAA	ND	0.55	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
N-MeFOSAA	ND	0.55	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.55	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.55	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.55	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.55	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluorooctanesulfonamide (FOSA)	0.21	0.55	0.11	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.55	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.55	0.17	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.55	0.17	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluorohexanesulfonic acid (PFHxS)	0.15	0.55	0.088	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.55	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.55	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.29	0.55	0.13	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.55	0.080	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.55	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.55	0.085	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluoroheptanoic acid (PFHpA)	0.69	0.55	0.079	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluorooctanoic acid (PFOA)	1.3	0.55	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluorooctanesulfonic acid (PFOS)	13	0.55	0.074	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH
Perfluorononanoic acid (PFNA)	0.55	0.55	0.090	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:16	BLH

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-6 (6-12)

Sampled: 10/28/2021 12:30

Sample ID: 21J1975-02

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	70.9		% Wt	1		SM 2540G	11/11/21	11/12/21 9:13	WT

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-7 (0-12)

Sampled: 10/28/2021 13:00

Sample ID: 21J1975-03

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.52	0.069	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.52	0.080	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.52	0.080	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.52	0.097	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.52	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
9Cl-PF3ONS (F53B Major)	ND	0.52	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.52	0.17	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.52	0.25	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.52	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluorodecanoic acid (PFDA)	ND	0.52	0.067	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.52	0.080	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.52	0.085	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.52	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
N-EtFOSAA	ND	0.52	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
N-MeFOSAA	ND	0.52	0.095	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.52	0.099	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.52	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.52	0.096	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.52	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.52	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.52	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.52	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.52	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.52	0.083	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.52	0.098	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.52	0.096	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.22	0.52	0.12	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.52	0.076	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.52	0.095	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.52	0.081	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.52	0.075	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluorooctanoic acid (PFOA)	ND	0.52	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluorooctanesulfonic acid (PFOS)	0.11	0.52	0.070	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH
Perfluorononanoic acid (PFNA)	ND	0.52	0.085	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:23	BLH

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-7 (0-12)

Sampled: 10/28/2021 13:00

Sample ID: 21J1975-03

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	73.6		% Wt	1		SM 2540G	11/11/21	11/12/21 9:13	WT

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-7 (12-24)

Sampled: 10/28/2021 13:30

Sample ID: 21J1975-04

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.45	0.060	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.45	0.069	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.45	0.069	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.45	0.085	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.45	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
9Cl-PF3ONS (F53B Major)	ND	0.45	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.45	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.45	0.22	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.45	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluorodecanoic acid (PFDA)	ND	0.45	0.058	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.45	0.069	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.45	0.074	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.45	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
N-EtFOSAA	ND	0.45	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
N-MeFOSAA	ND	0.45	0.083	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.45	0.087	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.45	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.45	0.084	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.45	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.45	0.089	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.45	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.45	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.45	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.45	0.072	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.45	0.086	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.45	0.084	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.45	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.45	0.066	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.45	0.083	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.45	0.070	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.45	0.065	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluorooctanoic acid (PFOA)	ND	0.45	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	0.45	0.061	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH
Perfluorononanoic acid (PFNA)	ND	0.45	0.074	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:30	BLH

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-7 (12-24)

Sampled: 10/28/2021 13:30

Sample ID: 21J1975-04

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	87.4		% Wt	1		SM 2540G	11/11/21	11/12/21 9:13	WT

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-8 (0-12)

Sampled: 10/28/2021 14:00

Sample ID: 21J1975-05

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.16	0.46	0.062	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.46	0.071	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.46	0.071	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.46	0.087	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.46	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
9Cl-PF3ONS (F53B Major)	ND	0.46	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.46	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.46	0.22	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.46	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluorodecanoic acid (PFDA)	0.20	0.46	0.060	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluorododecanoic acid (PFDoA)	0.094	0.46	0.071	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.46	0.076	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.46	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
N-EtFOSAA	ND	0.46	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
N-MeFOSAA	ND	0.46	0.085	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.46	0.089	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.46	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.46	0.086	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.46	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.46	0.091	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.46	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.46	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.46	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.46	0.074	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.46	0.088	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.46	0.086	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.46	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.46	0.068	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluoroundecanoic acid (PFUnA)	0.19	0.46	0.085	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.46	0.072	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.46	0.067	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluorooctanoic acid (PFOA)	0.43	0.46	0.13	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluorooctanesulfonic acid (PFOS)	0.64	0.46	0.063	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH
Perfluorononanoic acid (PFNA)	0.18	0.46	0.076	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:37	BLH

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-8 (0-12)

Sampled: 10/28/2021 14:00

Sample ID: 21J1975-05

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	84.2		% Wt	1		SM 2540G	11/11/21	11/12/21 9:13	WT

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-9 (0-12)

Sampled: 10/28/2021 14:30

Sample ID: 21J1975-06

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.48	0.064	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.48	0.074	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.48	0.074	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.48	0.090	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.48	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
9Cl-PF3ONS (F53B Major)	ND	0.48	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.48	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.48	0.23	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.48	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluorodecanoic acid (PFDA)	0.12	0.48	0.062	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.48	0.074	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.48	0.079	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.48	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
N-EtFOSAA	ND	0.48	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
N-MeFOSAA	ND	0.48	0.088	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.48	0.092	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.48	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.48	0.089	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.48	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.48	0.094	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.48	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.48	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.48	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.48	0.077	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.48	0.091	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.48	0.089	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.18	0.48	0.11	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.48	0.071	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.48	0.088	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.48	0.075	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluoroheptanoic acid (PFHpA)	0.13	0.48	0.070	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluorooctanoic acid (PFOA)	0.47	0.48	0.14	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluorooctanesulfonic acid (PFOS)	1.2	0.48	0.065	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH
Perfluorononanoic acid (PFNA)	0.13	0.48	0.079	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:44	BLH

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-9 (0-12)

Sampled: 10/28/2021 14:30

Sample ID: 21J1975-06

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	79.5		% Wt	1		SM 2540G	11/11/21	11/12/21 9:13	WT

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-9 (12-24)

Sampled: 10/28/2021 15:00

Sample ID: 21J1975-07

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.52	0.069	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.52	0.079	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.52	0.079	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.52	0.097	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.52	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
9Cl-PF3ONS (F53B Major)	ND	0.52	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.52	0.17	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.52	0.25	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.52	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluorodecanoic acid (PFDA)	ND	0.52	0.067	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.52	0.079	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.52	0.085	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.52	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
N-EtFOSAA	ND	0.52	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
N-MeFOSAA	ND	0.52	0.094	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.52	0.099	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.52	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.52	0.096	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.52	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.52	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.52	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.52	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.52	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.52	0.083	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.52	0.098	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.52	0.096	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.52	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.52	0.076	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.52	0.094	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.52	0.081	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluoroheptanoic acid (PFHpA)	0.093	0.52	0.075	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluorooctanoic acid (PFOA)	0.39	0.52	0.15	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluorooctanesulfonic acid (PFOS)	0.29	0.52	0.070	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH
Perfluorononanoic acid (PFNA)	ND	0.52	0.085	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:52	BLH

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-9 (12-24)

Sampled: 10/28/2021 15:00

Sample ID: 21J1975-07

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	75.0		% Wt	1		SM 2540G	11/11/21	11/12/21 9:14	WT

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-10 (0-12)

Sampled: 10/28/2021 15:30

Sample ID: 21J1975-08

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.43	0.057	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.43	0.066	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.43	0.066	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.43	0.080	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.43	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
9Cl-PF3ONS (F53B Major)	ND	0.43	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.43	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.43	0.21	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.43	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluorodecanoic acid (PFDA)	0.089	0.43	0.055	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.43	0.066	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.43	0.071	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.43	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
N-EtFOSAA	ND	0.43	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
N-MeFOSAA	ND	0.43	0.078	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.43	0.082	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.43	0.096	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.43	0.079	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.43	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.43	0.084	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.43	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.43	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.43	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.43	0.069	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.43	0.081	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.43	0.079	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.43	0.098	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.43	0.063	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.43	0.078	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.43	0.067	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluoroheptanoic acid (PFHpA)	0.12	0.43	0.062	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluorooctanoic acid (PFOA)	0.43	0.43	0.12	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluorooctanesulfonic acid (PFOS)	0.78	0.43	0.058	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH
Perfluorononanoic acid (PFNA)	0.27	0.43	0.071	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 12:59	BLH

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-10 (0-12)

Sampled: 10/28/2021 15:30

Sample ID: 21J1975-08

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	88.8		% Wt	1		SM 2540G	11/11/21	11/12/21 9:14	WT

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-10 (12-24)

Sampled: 10/28/2021 16:00

Sample ID: 21J1975-09

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.47	0.50	0.066	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.50	0.076	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluoropentanoic acid (PFPeA)	0.76	0.50	0.076	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluorohexanoic acid (PFHxA)	0.99	0.50	0.093	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.50	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
9Cl-PF3ONS (F53B Major)	ND	0.50	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.50	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.50	0.24	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.50	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluorodecanoic acid (PFDA)	ND	0.50	0.064	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.50	0.076	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.50	0.082	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.50	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
N-EtFOSAA	ND	0.50	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
N-MeFOSAA	ND	0.50	0.091	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.50	0.095	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.50	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.50	0.092	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.50	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.50	0.098	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.50	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.50	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.50	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.50	0.080	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.50	0.094	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.50	0.092	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.50	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.50	0.073	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.50	0.091	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.50	0.078	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluoroheptanoic acid (PFHpA)	1.9	0.50	0.072	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluorooctanoic acid (PFOA)	5.0	0.50	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluorooctanesulfonic acid (PFOS)	2.1	0.50	0.068	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH
Perfluorononanoic acid (PFNA)	0.68	0.50	0.082	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:06	BLH

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-10 (12-24)

Sampled: 10/28/2021 16:00

Sample ID: 21J1975-09

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	78.4		% Wt	1		SM 2540G	11/11/21	11/12/21 9:14	WT

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-11 (0-12)

Sampled: 10/28/2021 16:30

Sample ID: 21J1975-10

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.064	0.43	0.058	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.43	0.066	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.43	0.066	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.43	0.081	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.43	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
9Cl-PF3ONS (F53B Major)	ND	0.43	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.43	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.43	0.21	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.43	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluorodecanoic acid (PFDA)	ND	0.43	0.056	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.43	0.066	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.43	0.071	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.43	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
N-EtFOSAA	ND	0.43	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
N-MeFOSAA	ND	0.43	0.079	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.43	0.083	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.43	0.097	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.43	0.080	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.43	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.43	0.085	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.43	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.43	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.43	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.43	0.069	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.43	0.082	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.43	0.080	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.43	0.099	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.43	0.064	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.43	0.079	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.43	0.067	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluoroheptanoic acid (PFHpA)	0.063	0.43	0.063	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluorooctanoic acid (PFOA)	0.17	0.43	0.12	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluorooctanesulfonic acid (PFOS)	0.17	0.43	0.059	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH
Perfluorononanoic acid (PFNA)	ND	0.43	0.071	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:13	BLH

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-11 (0-12)

Sampled: 10/28/2021 16:30

Sample ID: 21J1975-10

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	87.7		% Wt	1		SM 2540G	11/11/21	11/12/21 9:14	WT

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-11 (12-24)

Sampled: 10/28/2021 17:00

Sample ID: 21J1975-11

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.45	0.061	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.45	0.070	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.45	0.070	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.45	0.085	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.45	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
9Cl-PF3ONS (F53B Major)	ND	0.45	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.45	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.45	0.22	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.45	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluorodecanoic acid (PFDA)	ND	0.45	0.059	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.45	0.070	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.45	0.075	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.45	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
N-EtFOSAA	ND	0.45	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
N-MeFOSAA	ND	0.45	0.083	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.45	0.087	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.45	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.45	0.084	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.45	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.45	0.089	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.45	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.45	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.45	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.45	0.073	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.45	0.086	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.45	0.084	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.16	0.45	0.10	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.45	0.067	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.45	0.083	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.45	0.071	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.45	0.066	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluorooctanoic acid (PFOA)	ND	0.45	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	0.45	0.062	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH
Perfluorononanoic acid (PFNA)	ND	0.45	0.075	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:28	BLH

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-11 (12-24)

Sampled: 10/28/2021 17:00

Sample ID: 21J1975-11

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	83.8		% Wt	1		SM 2540G	11/11/21	11/12/21 9:14	WT

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-12 (0-12)

Sampled: 10/28/2021 17:30

Sample ID: 21J1975-12

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.48	0.063	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.48	0.073	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.48	0.073	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.48	0.089	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.48	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
9Cl-PF3ONS (F53B Major)	ND	0.48	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.48	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.48	0.23	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.48	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluorodecanoic acid (PFDA)	ND	0.48	0.061	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.48	0.073	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.48	0.078	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.48	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
N-EtFOSAA	ND	0.48	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
N-MeFOSAA	ND	0.48	0.087	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.48	0.091	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.48	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.48	0.088	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.48	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.48	0.093	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.48	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.48	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.48	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.48	0.076	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.48	0.090	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.48	0.088	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.48	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.48	0.070	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.48	0.087	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.48	0.074	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.48	0.069	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluorooctanoic acid (PFOA)	0.34	0.48	0.14	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluorooctanesulfonic acid (PFOS)	0.19	0.48	0.064	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH
Perfluorononanoic acid (PFNA)	ND	0.48	0.078	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:35	BLH

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-12 (0-12)

Sampled: 10/28/2021 17:30

Sample ID: 21J1975-12

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	81.7		% Wt	1		SM 2540G	11/11/21	11/12/21 9:14	WT

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-13 (0-12)

Sampled: 10/28/2021 18:30

Sample ID: 21J1975-14

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.19	0.49	0.066	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.49	0.076	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluoropentanoic acid (PFPeA)	0.22	0.49	0.076	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluorohexanoic acid (PFHxA)	0.11	0.49	0.092	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.49	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
9Cl-PF3ONS (F53B Major)	ND	0.49	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.49	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.49	0.24	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.49	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluorodecanoic acid (PFDA)	0.39	0.49	0.064	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluorododecanoic acid (PFDoA)	0.13	0.49	0.076	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.49	0.081	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.49	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
N-EtFOSAA	ND	0.49	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
N-MeFOSAA	ND	0.49	0.090	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.49	0.094	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.49	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.49	0.091	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.49	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.49	0.096	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.49	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.49	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.49	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.49	0.079	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.49	0.093	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.49	0.091	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.49	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.49	0.072	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluoroundecanoic acid (PFUnA)	0.15	0.49	0.090	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.49	0.077	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluoroheptanoic acid (PFHpA)	0.12	0.49	0.071	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluorooctanoic acid (PFOA)	0.34	0.49	0.14	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluorooctanesulfonic acid (PFOS)	2.4	0.49	0.067	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH
Perfluorononanoic acid (PFNA)	0.17	0.49	0.081	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:42	BLH

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-13 (0-12)

Sampled: 10/28/2021 18:30

Sample ID: 21J1975-14

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	80.1		% Wt	1		SM 2540G	11/11/21	11/12/21 9:15	WT

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-13 (12-24)

Sampled: 10/28/2021 19:00

Sample ID: 21J1975-15

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.21	0.47	0.062	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluorobutanesulfonic acid (PFBS)	0.11	0.47	0.072	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluoropentanoic acid (PFPeA)	0.25	0.47	0.072	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluorohexanoic acid (PFHxA)	0.18	0.47	0.087	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.47	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
9Cl-PF3ONS (F53B Major)	ND	0.47	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.47	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.47	0.23	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.47	0.12	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluorodecanoic acid (PFDA)	0.14	0.47	0.060	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.47	0.072	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.47	0.077	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.47	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
N-EtFOSAA	ND	0.47	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
N-MeFOSAA	ND	0.47	0.085	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.47	0.089	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.47	0.10	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.47	0.086	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.47	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.47	0.091	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.47	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.47	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.47	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.47	0.075	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.47	0.088	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.47	0.086	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.47	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.47	0.069	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.47	0.085	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.47	0.073	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluoroheptanoic acid (PFHpA)	0.21	0.47	0.068	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluorooctanoic acid (PFOA)	0.65	0.47	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluorooctanesulfonic acid (PFOS)	2.4	0.47	0.063	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH
Perfluorononanoic acid (PFNA)	0.37	0.47	0.077	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:49	BLH

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-13 (12-24)

Sampled: 10/28/2021 19:00

Sample ID: 21J1975-15

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	85.0		% Wt	1		SM 2540G	11/11/21	11/12/21 9:15	WT

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-14 (0-6)

Sampled: 10/28/2021 19:30

Sample ID: 21J1975-16

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.38	0.59	0.078	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.59	0.090	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluoropentanoic acid (PFPeA)	0.20	0.59	0.090	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluorohexanoic acid (PFHxA)	0.29	0.59	0.11	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.59	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
9Cl-PF3ONS (F53B Major)	ND	0.59	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.59	0.19	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.59	0.28	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.59	0.15	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluorodecanoic acid (PFDA)	ND	0.59	0.076	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.59	0.090	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.59	0.096	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.59	0.18	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
N-EtFOSAA	ND	0.59	0.17	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
N-MeFOSAA	ND	0.59	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.59	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.59	0.13	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.59	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.59	0.14	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.59	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.59	0.16	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.59	0.18	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.59	0.19	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.59	0.094	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.59	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.59	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.22	0.59	0.13	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.59	0.086	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.59	0.11	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.59	0.091	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluoroheptanoic acid (PFHpA)	0.42	0.59	0.085	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluorooctanoic acid (PFOA)	1.8	0.59	0.17	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluorooctanesulfonic acid (PFOS)	1.0	0.59	0.080	µg/kg dry	1		SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH
Perfluorononanoic acid (PFNA)	0.30	0.59	0.096	µg/kg dry	1	J	SOP-466 PFAS	11/9/21	11/12/21 13:56	BLH

Project Location: 54 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1975

Date Received: 10/29/2021

Field Sample #: 54MTN S-14 (0-6)

Sampled: 10/28/2021 19:30

Sample ID: 21J1975-16

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	66.0		% Wt	1		SM 2540G	11/11/21	11/12/21 9:15	WT

Sample Extraction Data

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
21J1975-01 [54MTN S-5A (0-12)]	B294465	11/11/21
21J1975-02 [54MTN S-6 (6-12)]	B294465	11/11/21
21J1975-03 [54MTN S-7 (0-12)]	B294465	11/11/21
21J1975-04 [54MTN S-7 (12-24)]	B294465	11/11/21
21J1975-05 [54MTN S-8 (0-12)]	B294465	11/11/21
21J1975-06 [54MTN S-9 (0-12)]	B294465	11/11/21
21J1975-07 [54MTN S-9 (12-24)]	B294465	11/11/21
21J1975-08 [54MTN S-10 (0-12)]	B294465	11/11/21
21J1975-09 [54MTN S-10 (12-24)]	B294465	11/11/21
21J1975-10 [54MTN S-11 (0-12)]	B294465	11/11/21
21J1975-11 [54MTN S-11 (12-24)]	B294465	11/11/21
21J1975-12 [54MTN S-12 (0-12)]	B294465	11/11/21
21J1975-14 [54MTN S-13 (0-12)]	B294465	11/11/21
21J1975-15 [54MTN S-13 (12-24)]	B294465	11/11/21
21J1975-16 [54MTN S-14 (0-6)]	B294465	11/11/21

Prep Method: SOP 465-PFAAS-SOP-466 PFAS

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21J1975-01 [54MTN S-5A (0-12)]	B294103	5.93	5.00	11/09/21
21J1975-02 [54MTN S-6 (6-12)]	B294103	5.79	5.00	11/09/21
21J1975-03 [54MTN S-7 (0-12)]	B294103	5.89	5.00	11/09/21
21J1975-04 [54MTN S-7 (12-24)]	B294103	5.69	5.00	11/09/21
21J1975-05 [54MTN S-8 (0-12)]	B294103	5.75	5.00	11/09/21
21J1975-06 [54MTN S-9 (0-12)]	B294103	5.86	5.00	11/09/21
21J1975-07 [54MTN S-9 (12-24)]	B294103	5.79	5.00	11/09/21
21J1975-08 [54MTN S-10 (0-12)]	B294103	5.90	5.00	11/09/21
21J1975-09 [54MTN S-10 (12-24)]	B294103	5.76	5.00	11/09/21
21J1975-10 [54MTN S-11 (0-12)]	B294103	5.92	5.00	11/09/21
21J1975-11 [54MTN S-11 (12-24)]	B294103	5.92	5.00	11/09/21
21J1975-12 [54MTN S-12 (0-12)]	B294103	5.79	5.00	11/09/21
21J1975-14 [54MTN S-13 (0-12)]	B294103	5.70	5.00	11/09/21
21J1975-15 [54MTN S-13 (12-24)]	B294103	5.66	5.00	11/09/21
21J1975-16 [54MTN S-14 (0-6)]	B294103	5.81	5.00	11/09/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B294103 - SOP 465-PFAAS

Blank (B294103-BLK1)

Prepared: 11/09/21 Analyzed: 11/12/21

Perfluorobutanoic acid (PFBA)	ND	0.39	µg/kg wet							
Perfluorobutanesulfonic acid (PFBS)	ND	0.39	µg/kg wet							
Perfluoropentanoic acid (PFPeA)	ND	0.39	µg/kg wet							
Perfluorohexanoic acid (PFHxA)	ND	0.39	µg/kg wet							
11Cl-PF3OUdS (F53B Minor)	ND	0.39	µg/kg wet							
9Cl-PF3ONS (F53B Major)	ND	0.39	µg/kg wet							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.39	µg/kg wet							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.39	µg/kg wet							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.39	µg/kg wet							
Perfluorodecanoic acid (PFDA)	ND	0.39	µg/kg wet							
Perfluorododecanoic acid (PFDoA)	ND	0.39	µg/kg wet							
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.39	µg/kg wet							
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.39	µg/kg wet							
N-EtFOSAA	ND	0.39	µg/kg wet							
N-MeFOSAA	ND	0.39	µg/kg wet							
Perfluorotetradecanoic acid (PFTA)	ND	0.39	µg/kg wet							
Perfluorotridecanoic acid (PFTrDA)	ND	0.39	µg/kg wet							
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.39	µg/kg wet							
Perfluorodecanesulfonic acid (PFDS)	ND	0.39	µg/kg wet							
Perfluorooctanesulfonamide (FOSA)	ND	0.39	µg/kg wet							
Perfluorononanesulfonic acid (PFNS)	ND	0.39	µg/kg wet							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.39	µg/kg wet							
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.39	µg/kg wet							
Perfluorohexanesulfonic acid (PFHxS)	ND	0.39	µg/kg wet							
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.39	µg/kg wet							
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.39	µg/kg wet							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.39	µg/kg wet							
Perfluoropentanesulfonic acid (PFPeS)	ND	0.39	µg/kg wet							
Perfluoroundecanoic acid (PFUnA)	ND	0.39	µg/kg wet							
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.39	µg/kg wet							
Perfluoroheptanoic acid (PFHpA)	ND	0.39	µg/kg wet							
Perfluorooctanoic acid (PFOA)	ND	0.39	µg/kg wet							
Perfluorooctanesulfonic acid (PFOS)	ND	0.39	µg/kg wet							
Perfluorononanoic acid (PFNA)	ND	0.39	µg/kg wet							

LCS (B294103-BS1)

Prepared: 11/09/21 Analyzed: 11/12/21

Perfluorobutanoic acid (PFBA)	2.15	0.38	µg/kg wet	2.14	101	71-135
Perfluorobutanesulfonic acid (PFBS)	2.02	0.38	µg/kg wet	1.89	107	72-128
Perfluoropentanoic acid (PFPeA)	2.17	0.38	µg/kg wet	2.14	102	69-132
Perfluorohexanoic acid (PFHxA)	2.13	0.38	µg/kg wet	2.14	99.8	70-132
11Cl-PF3OUdS (F53B Minor)	2.45	0.38	µg/kg wet	2.01	122	50-150
9Cl-PF3ONS (F53B Major)	2.35	0.38	µg/kg wet	1.99	118	50-150
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	2.10	0.38	µg/kg wet	2.01	104	50-150
Hexafluoropropylene oxide dimer acid (HFPO-DA)	2.42	0.38	µg/kg wet	2.14	113	50-150
8:2 Fluorotelomersulfonic acid (8:2FTS A)	2.47	0.38	µg/kg wet	2.05	120	65-137
Perfluorodecanoic acid (PFDA)	2.10	0.38	µg/kg wet	2.14	98.1	69-133
Perfluorododecanoic acid (PFDoA)	2.22	0.38	µg/kg wet	2.14	104	69-135
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	2.21	0.38	µg/kg wet	1.90	116	50-150

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B294103 - SOP 465-PFAAS

LCS (B294103-BS1)

Prepared: 11/09/21 Analyzed: 11/12/21

Perfluoroheptanesulfonic acid (PFHpS)	2.15	0.38	µg/kg wet	2.04		105	70-132			
N-EtFOSAA	2.48	0.38	µg/kg wet	2.14		116	61-139			
N-MeFOSAA	2.32	0.38	µg/kg wet	2.14		109	63-144			
Perfluorotetradecanoic acid (PFTA)	2.08	0.38	µg/kg wet	2.14		97.7	69-133			
Perfluorotridecanoic acid (PFTTrDA)	2.15	0.38	µg/kg wet	2.14		101	66-139			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.20	0.38	µg/kg wet	2.00		110	62-145			
Perfluorodecanesulfonic acid (PFDS)	2.10	0.38	µg/kg wet	2.06		102	59-134			
Perfluorooctanesulfonamide (FOSA)	2.08	0.38	µg/kg wet	2.14		97.3	67-137			
Perfluorononanesulfonic acid (PFNS)	2.46	0.38	µg/kg wet	2.05		120	69-125			
Perfluoro-1-hexanesulfonamide (FHxSA)	2.57	0.38	µg/kg wet	2.14		120	50-150			
Perfluoro-1-butanefulfonamide (FBSA)	2.23	0.38	µg/kg wet	2.14		105	50-150			
Perfluorohexanesulfonic acid (PFHxS)	1.94	0.38	µg/kg wet	1.94		100	67-130			
Perfluoro-4-oxapentanoic acid (PFMPA)	2.44	0.38	µg/kg wet	2.14		114	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	2.32	0.38	µg/kg wet	2.14		109	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.40	0.38	µg/kg wet	2.03		118	64-140			
Perfluoropentanesulfonic acid (PFPeS)	1.96	0.38	µg/kg wet	2.01		97.7	73-123			
Perfluoroundecanoic acid (PFUnA)	2.19	0.38	µg/kg wet	2.14		103	64-136			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.53	0.38	µg/kg wet	2.14		119	50-150			
Perfluoroheptanoic acid (PFHpA)	2.36	0.38	µg/kg wet	2.14		111	71-131			
Perfluorooctanoic acid (PFOA)	2.43	0.38	µg/kg wet	2.14		114	69-133			
Perfluorooctanesulfonic acid (PFOS)	2.15	0.38	µg/kg wet	1.97		109	68-136			
Perfluorononanoic acid (PFNA)	2.27	0.38	µg/kg wet	2.14		106	72-129			

Matrix Spike (B294103-MS1)

Source: 21J1975-01

Prepared: 11/09/21 Analyzed: 11/12/21

Perfluorobutanoic acid (PFBA)	2.71	0.48	µg/kg dry	2.65	ND	102	71-135			
Perfluorobutanesulfonic acid (PFBS)	2.79	0.48	µg/kg dry	2.34	0.311	106	72-128			
Perfluoropentanoic acid (PFPeA)	2.78	0.48	µg/kg dry	2.65	0.124	100	69-132			
Perfluorohexanoic acid (PFHxA)	2.80	0.48	µg/kg dry	2.65	0.146	100	70-132			
11Cl-PF3OUdS (F53B Minor)	2.74	0.48	µg/kg dry	2.49	ND	110	50-150			
9Cl-PF3ONS (F53B Major)	2.94	0.48	µg/kg dry	2.47	ND	119	50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	2.53	0.48	µg/kg dry	2.49	ND	102	50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	3.23	0.48	µg/kg dry	2.65	ND	122	50-150			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	2.98	0.48	µg/kg dry	2.54	ND	117	65-137			
Perfluorodecanoic acid (PFDA)	2.73	0.48	µg/kg dry	2.65	0.0833	100	69-133			
Perfluorododecanoic acid (PFDoA)	2.71	0.48	µg/kg dry	2.65	ND	102	69-135			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	2.76	0.48	µg/kg dry	2.36	ND	117	50-150			
Perfluoroheptanesulfonic acid (PFHpS)	2.73	0.48	µg/kg dry	2.53	ND	108	70-132			
N-EtFOSAA	3.24	0.48	µg/kg dry	2.65	ND	122	61-139			
N-MeFOSAA	3.01	0.48	µg/kg dry	2.65	ND	114	63-144			
Perfluorotetradecanoic acid (PFTA)	2.70	0.48	µg/kg dry	2.65	ND	102	69-133			
Perfluorotridecanoic acid (PFTTrDA)	2.73	0.48	µg/kg dry	2.65	ND	103	66-139			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.78	0.48	µg/kg dry	2.48	ND	112	62-145			
Perfluorodecanesulfonic acid (PFDS)	2.69	0.48	µg/kg dry	2.55	ND	105	59-134			
Perfluorooctanesulfonamide (FOSA)	2.64	0.48	µg/kg dry	2.65	ND	99.6	67-137			
Perfluorononanesulfonic acid (PFNS)	3.23	0.48	µg/kg dry	2.54	ND	127 *	69-125			MS-22
Perfluoro-1-hexanesulfonamide (FHxSA)	3.09	0.48	µg/kg dry	2.65	ND	117	50-150			
Perfluoro-1-butanefulfonamide (FBSA)	2.91	0.48	µg/kg dry	2.65	ND	110	50-150			
Perfluorohexanesulfonic acid (PFHxS)	2.56	0.48	µg/kg dry	2.41	ND	106	67-130			
Perfluoro-4-oxapentanoic acid (PFMPA)	3.12	0.48	µg/kg dry	2.65	ND	118	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	2.93	0.48	µg/kg dry	2.65	ND	111	50-150			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B294103 - SOP 465-PFAAS

Matrix Spike (B294103-MS1)	Source: 21J1975-01			Prepared: 11/09/21 Analyzed: 11/12/21					
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.84	0.48	µg/kg dry	2.51	ND 113	64-140			
Perfluoropetanesulfonic acid (PFPeS)	2.52	0.48	µg/kg dry	2.49	ND 101	73-123			
Perfluoroundecanoic acid (PFUnA)	2.84	0.48	µg/kg dry	2.65	ND 107	64-136			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	3.17	0.48	µg/kg dry	2.65	ND 120	50-150			
Perfluoroheptanoic acid (PFHpA)	3.06	0.48	µg/kg dry	2.65	0.109 111	71-131			
Perfluorooctanoic acid (PFOA)	3.33	0.48	µg/kg dry	2.65	0.230 117	69-133			
Perfluorooctanesulfonic acid (PFOS)	3.38	0.48	µg/kg dry	2.45	0.711 109	68-136			
Perfluorononanoic acid (PFNA)	3.09	0.48	µg/kg dry	2.65	ND 117	72-129			

Matrix Spike Dup (B294103-MSD1)	Source: 21J1975-01			Prepared: 11/09/21 Analyzed: 11/12/21					
Perfluorobutanoic acid (PFBA)	2.76	0.47	µg/kg dry	2.62	ND 106	71-135	1.95	30	
Perfluorobutanesulfonic acid (PFBS)	2.76	0.47	µg/kg dry	2.31	0.311 106	72-128	0.948	30	
Perfluoropentanoic acid (PFPeA)	2.71	0.47	µg/kg dry	2.62	0.124 98.8	69-132	2.61	30	
Perfluorohexanoic acid (PFHxA)	2.76	0.47	µg/kg dry	2.62	0.146 99.7	70-132	1.59	30	
11Cl-PF3OUdS (F53B Minor)	2.94	0.47	µg/kg dry	2.46	ND 119	50-150	6.98	30	
9Cl-PF3ONS (F53B Major)	2.85	0.47	µg/kg dry	2.44	ND 117	50-150	3.26	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	2.52	0.47	µg/kg dry	2.46	ND 102	50-150	0.343	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	3.25	0.47	µg/kg dry	2.62	ND 124	50-150	0.668	30	
8:2 Fluorotelomersulfonic acid (8:2FTS A)	2.68	0.47	µg/kg dry	2.51	ND 107	65-137	10.6	30	
Perfluorodecanoic acid (PFDA)	2.64	0.47	µg/kg dry	2.62	0.0833 97.9	69-133	3.34	30	
Perfluorododecanoic acid (PFDoA)	2.84	0.47	µg/kg dry	2.62	ND 108	69-135	4.51	30	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	2.76	0.47	µg/kg dry	2.33	ND 118	50-150	0.292	30	
Perfluoroheptanesulfonic acid (PFHpS)	3.02	0.47	µg/kg dry	2.50	ND 121	70-132	9.92	30	
N-EtFOSAA	3.10	0.47	µg/kg dry	2.62	ND 118	61-139	4.49	30	
N-MeFOSAA	2.93	0.47	µg/kg dry	2.62	ND 112	63-144	2.70	30	
Perfluorotetradecanoic acid (PFTA)	2.67	0.47	µg/kg dry	2.62	ND 102	69-133	1.00	30	
Perfluorotridecanoic acid (PFTrDA)	2.71	0.47	µg/kg dry	2.62	ND 104	66-139	0.740	30	
4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.75	0.47	µg/kg dry	2.45	ND 112	62-145	1.29	30	
Perfluorodecanesulfonic acid (PFDS)	2.92	0.47	µg/kg dry	2.52	ND 116	59-134	8.12	30	
Perfluorooctanesulfonamide (FOSA)	2.83	0.47	µg/kg dry	2.62	ND 108	67-137	7.01	30	
Perfluoronanesulfonic acid (PFNS)	2.84	0.47	µg/kg dry	2.51	ND 113	69-125	12.8	30	
Perfluoro-1-hexanesulfonamide (FHxSA)	3.11	0.47	µg/kg dry	2.62	ND 119	50-150	0.747	30	
Perfluoro-1-butanesulfonamide (FBSA)	2.93	0.47	µg/kg dry	2.62	ND 112	50-150	0.708	30	
Perfluorohexanesulfonic acid (PFHxS)	2.46	0.47	µg/kg dry	2.38	ND 103	67-130	4.18	30	
Perfluoro-4-oxapentanoic acid (PFMPA)	3.09	0.47	µg/kg dry	2.62	ND 118	50-150	1.12	30	
Perfluoro-5-oxahexanoic acid (PFMBA)	2.91	0.47	µg/kg dry	2.62	ND 111	50-150	0.844	30	
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.76	0.47	µg/kg dry	2.49	ND 111	64-140	2.83	30	
Perfluoropetanesulfonic acid (PFPeS)	2.54	0.47	µg/kg dry	2.46	ND 103	73-123	0.640	30	
Perfluoroundecanoic acid (PFUnA)	2.69	0.47	µg/kg dry	2.62	ND 103	64-136	5.74	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	3.09	0.47	µg/kg dry	2.62	ND 118	50-150	2.58	30	
Perfluoroheptanoic acid (PFHpA)	2.90	0.47	µg/kg dry	2.62	0.109 107	71-131	5.13	30	
Perfluorooctanoic acid (PFOA)	3.22	0.47	µg/kg dry	2.62	0.230 114	69-133	3.22	30	
Perfluorooctanesulfonic acid (PFOS)	3.21	0.47	µg/kg dry	2.42	0.711 103	68-136	5.22	30	
Perfluorononanoic acid (PFNA)	2.87	0.47	µg/kg dry	2.62	ND 109	72-129	7.67	30	

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
MS-22	Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is within method specified criteria.
PF-17	Extracted Internal Standard recovery is outside of control limits. Data is not significantly affected since associated analyte is not detected and bias is on the high side.

ANALYST

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STATION PDF Management Station
JFC James F. Constantino
JLH Jessica L. Hoffman
EGR Evett G Rivera
AP Alan Pienkowski

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
54MTN S-5A (0-12) (21J1975-01)			Lab File ID: 21J1975-01.d			Analyzed: 11/12/21 12:09			
M8FOSA	365988.8	4.00455	434,290.00	4.036517	84	50 - 150	-0.0320	+/-0.50	
M2-4:2FTS	159005.3	2.52145	199,038.00	2.570733	80	50 - 150	-0.0493	+/-0.50	
M2PFTA	1593222	4.3378	1,748,768.00	4.362167	91	50 - 150	-0.0244	+/-0.50	
M2-8:2FTS	397952.9	3.818717	219,119.00	3.842967	182	50 - 150	-0.0242	+/-0.50	*
MPFBA	652837	1.116633	744,445.00	1.100017	88	50 - 150	0.0166	+/-0.50	
M3HFPO-DA	202693.8	2.855667	271,282.00	2.904767	75	50 - 150	-0.0491	+/-0.50	
M6PFDA	1042556	3.81925	1,013,901.00	3.84345	103	50 - 150	-0.0242	+/-0.50	
M3PFBS	158281.4	1.9364	170,351.00	1.96145	93	50 - 150	-0.0251	+/-0.50	
M7PFUnA	1318297	3.962017	1,405,982.00	3.986	94	50 - 150	-0.0240	+/-0.50	
M2-6:2FTS	139251.7	3.4614	123,278.00	3.48535	113	50 - 150	-0.0240	+/-0.50	
M5PFPeA	647297.9	1.766017	749,755.00	1.7826	86	50 - 150	-0.0166	+/-0.50	
M5PFHxA	885703.4	2.605183	999,321.00	2.663233	89	50 - 150	-0.0581	+/-0.50	
M3PFHxS	121113.8	3.226417	126,860.00	3.25875	95	50 - 150	-0.0323	+/-0.50	
M4PFHpA	902059.1	3.195017	1,062,495.00	3.227617	85	50 - 150	-0.0326	+/-0.50	
M8PFOA	901621.9	3.4779	1,022,909.00	3.493867	88	50 - 150	-0.0160	+/-0.50	
M8PFOS	133168.5	3.668117	147,936.00	3.684083	90	50 - 150	-0.0160	+/-0.50	
M9PFNA	780913.6	3.661167	891,883.00	3.685133	88	50 - 150	-0.0240	+/-0.50	
MPFDoA	1358013	4.096633	1,396,075.00	4.128783	97	50 - 150	-0.0322	+/-0.50	
d5-NEtFOSAA	278021.9	3.969483	289,504.00	3.993467	96	50 - 150	-0.0240	+/-0.50	
d3-NMeFOSAA	340147.4	3.889733	319,952.00	3.913883	106	50 - 150	-0.0241	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
54MTN S-6 (6-12) (21J1975-02)			Lab File ID: 21J1975-02.d			Analyzed: 11/12/21 12:16			
M8FOSA	377888	3.988567	434,290.00	4.036517	87	50 - 150	-0.0479	+/-0.50	
M2-4:2FTS	146883.9	2.4146	199,038.00	2.570733	74	50 - 150	-0.1561	+/-0.50	
M2PFTA	1580477	4.313416	1,748,768.00	4.362167	90	50 - 150	-0.0488	+/-0.50	
M2-8:2FTS	403473.2	3.794817	219,119.00	3.842967	184	50 - 150	-0.0481	+/-0.50	*
MPFBA	667990.8	1.066783	744,445.00	1.100017	90	50 - 150	-0.0332	+/-0.50	
M3HFPO-DA	204739.2	2.757467	271,282.00	2.904767	75	50 - 150	-0.1473	+/-0.50	
M6PFDA	1079654	3.795333	1,013,901.00	3.84345	106	50 - 150	-0.0481	+/-0.50	
M3PFBS	155077.6	1.828667	170,351.00	1.96145	91	50 - 150	-0.1328	+/-0.50	
M7PFUnA	1310772	3.938033	1,405,982.00	3.986	93	50 - 150	-0.0480	+/-0.50	
M2-6:2FTS	129930.2	3.4293	123,278.00	3.48535	105	50 - 150	-0.0560	+/-0.50	
M5PFPeA	666958.2	1.6652	749,755.00	1.7826	89	50 - 150	-0.1174	+/-0.50	
M5PFHxA	896783.2	2.490217	999,321.00	2.663233	90	50 - 150	-0.1730	+/-0.50	
M3PFHxS	113818.2	3.185733	126,860.00	3.25875	90	50 - 150	-0.0730	+/-0.50	
M4PFHpA	886914.8	3.14655	1,062,495.00	3.227617	83	50 - 150	-0.0811	+/-0.50	
M8PFOA	891305.1	3.437833	1,022,909.00	3.493867	87	50 - 150	-0.0560	+/-0.50	
M8PFOS	135320.2	3.644167	147,936.00	3.684083	91	50 - 150	-0.0399	+/-0.50	
M9PFNA	799163.3	3.637217	891,883.00	3.685133	90	50 - 150	-0.0479	+/-0.50	
MPFDoA	1340241	4.07265	1,396,075.00	4.128783	96	50 - 150	-0.0561	+/-0.50	
d5-NEtFOSAA	284659.4	3.9455	289,504.00	3.993467	98	50 - 150	-0.0480	+/-0.50	
d3-NMeFOSAA	360316.6	3.873767	319,952.00	3.913883	113	50 - 150	-0.0401	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
54MTN S-7 (0-12) (21J1975-03)			Lab File ID: 21J1975-03.d			Analyzed: 11/12/21 12:23			
M8FOSA	359925.8	3.988567	434,290.00	4.036517	83	50 - 150	-0.0479	+/-0.50	
M2-4:2FTS	140175.7	2.4146	199,038.00	2.570733	70	50 - 150	-0.1561	+/-0.50	
M2PFTA	1592863	4.32155	1,748,768.00	4.362167	91	50 - 150	-0.0406	+/-0.50	
M2-8:2FTS	340281.9	3.794817	219,119.00	3.842967	155	50 - 150	-0.0481	+/-0.50	*
MPFBA	647964.3	1.066783	744,445.00	1.100017	87	50 - 150	-0.0332	+/-0.50	
M3HFPO-DA	201279.8	2.757467	271,282.00	2.904767	74	50 - 150	-0.1473	+/-0.50	
M6PFDA	1037173	3.795333	1,013,901.00	3.84345	102	50 - 150	-0.0481	+/-0.50	
M3PFBS	151873.1	1.828667	170,351.00	1.96145	89	50 - 150	-0.1328	+/-0.50	
M7PFUnA	1237739	3.938033	1,405,982.00	3.986	88	50 - 150	-0.0480	+/-0.50	
M2-6:2FTS	106249.8	3.4293	123,278.00	3.48535	86	50 - 150	-0.0560	+/-0.50	
M5PFPeA	636904.1	1.6652	749,755.00	1.7826	85	50 - 150	-0.1174	+/-0.50	
M5PFHxA	852414.4	2.490217	999,321.00	2.663233	85	50 - 150	-0.1730	+/-0.50	
M3PFHxS	114028.6	3.185733	126,860.00	3.25875	90	50 - 150	-0.0730	+/-0.50	
M4PFHpA	875947.1	3.14655	1,062,495.00	3.227617	82	50 - 150	-0.0811	+/-0.50	
M8PFOA	884897.4	3.445817	1,022,909.00	3.493867	87	50 - 150	-0.0480	+/-0.50	
M8PFOS	129446.8	3.644167	147,936.00	3.684083	88	50 - 150	-0.0399	+/-0.50	
M9PFNA	746717.4	3.637217	891,883.00	3.685133	84	50 - 150	-0.0479	+/-0.50	
MPFDoA	1311473	4.08065	1,396,075.00	4.128783	94	50 - 150	-0.0481	+/-0.50	
d5-NEtFOSAA	266247.9	3.9455	289,504.00	3.993467	92	50 - 150	-0.0480	+/-0.50	
d3-NMeFOSAA	317423.1	3.873767	319,952.00	3.913883	99	50 - 150	-0.0401	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
54MTN S-7 (12-24) (21J1975-04)			Lab File ID: 21J1975-04.d			Analyzed: 11/12/21 12:30			
M8FOSA	402553.1	3.99655	434,290.00	4.036517	93	50 - 150	-0.0400	+/-0.50	
M2-4:2FTS	153784.6	2.4228	199,038.00	2.570733	77	50 - 150	-0.1479	+/-0.50	
M2PFTA	1584115	4.32155	1,748,768.00	4.362167	91	50 - 150	-0.0406	+/-0.50	
M2-8:2FTS	333632.3	3.802783	219,119.00	3.842967	152	50 - 150	-0.0402	+/-0.50	*
MPFBA	713505.6	1.066783	744,445.00	1.100017	96	50 - 150	-0.0332	+/-0.50	
M3HFPO-DA	231076.1	2.76565	271,282.00	2.904767	85	50 - 150	-0.1391	+/-0.50	
M6PFDA	1144405	3.803317	1,013,901.00	3.84345	113	50 - 150	-0.0401	+/-0.50	
M3PFBS	160281.9	1.83695	170,351.00	1.96145	94	50 - 150	-0.1245	+/-0.50	
M7PFUnA	1344748	3.946033	1,405,982.00	3.986	96	50 - 150	-0.0400	+/-0.50	
M2-6:2FTS	110450.9	3.437283	123,278.00	3.48535	90	50 - 150	-0.0481	+/-0.50	
M5PFPeA	700915.7	1.673467	749,755.00	1.7826	93	50 - 150	-0.1091	+/-0.50	
M5PFHxA	942661.7	2.498417	999,321.00	2.663233	94	50 - 150	-0.1648	+/-0.50	
M3PFHxS	122140.9	3.185733	126,860.00	3.25875	96	50 - 150	-0.0730	+/-0.50	
M4PFHpA	971248.1	3.14655	1,062,495.00	3.227617	91	50 - 150	-0.0811	+/-0.50	
M8PFOA	929656.4	3.445817	1,022,909.00	3.493867	91	50 - 150	-0.0480	+/-0.50	
M8PFOS	142716.3	3.644167	147,936.00	3.684083	96	50 - 150	-0.0399	+/-0.50	
M9PFNA	854634.4	3.6452	891,883.00	3.685133	96	50 - 150	-0.0399	+/-0.50	
MPFDoA	1411911	4.08065	1,396,075.00	4.128783	101	50 - 150	-0.0481	+/-0.50	
d5-NEtFOSAA	270357.9	3.9535	289,504.00	3.993467	93	50 - 150	-0.0400	+/-0.50	
d3-NMeFOSAA	291402.8	3.873767	319,952.00	3.913883	91	50 - 150	-0.0401	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
54MTN S-8 (0-12) (21J1975-05)			Lab File ID: 21J1975-05.d		Analyzed: 11/12/21 12:37				
M8FOSA	380862.7	3.948583	434,290.00	4.036517	88	50 - 150	-0.0879	+/-0.50	
M2-4:2FTS	154144.5	2.3326	199,038.00	2.570733	77	50 - 150	-0.2381	+/-0.50	
M2PFTA	1714952	4.289183	1,748,768.00	4.362167	98	50 - 150	-0.0730	+/-0.50	
M2-8:2FTS	351261.7	3.770917	219,119.00	3.842967	160	50 - 150	-0.0720	+/-0.50	*
MPFBA	702172.2	1.04185	744,445.00	1.100017	94	50 - 150	-0.0582	+/-0.50	
M3HFPO-DA	234198.1	2.6748	271,282.00	2.904767	86	50 - 150	-0.2300	+/-0.50	
M6PFDA	1134465	3.771433	1,013,901.00	3.84345	112	50 - 150	-0.0720	+/-0.50	
M3PFBS	159815.8	1.761267	170,351.00	1.96145	94	50 - 150	-0.2002	+/-0.50	
M7PFUnA	1367896	3.91405	1,405,982.00	3.986	97	50 - 150	-0.0720	+/-0.50	
M2-6:2FTS	130389.8	3.396333	123,278.00	3.48535	106	50 - 150	-0.0890	+/-0.50	
M5PFPeA	694476.6	1.615567	749,755.00	1.7826	93	50 - 150	-0.1670	+/-0.50	
M5PFHxA	943992.6	2.407867	999,321.00	2.663233	94	50 - 150	-0.2554	+/-0.50	
M3PFHxS	121905.6	3.137267	126,860.00	3.25875	96	50 - 150	-0.1215	+/-0.50	
M4PFHpA	953990.6	3.089033	1,062,495.00	3.227617	90	50 - 150	-0.1386	+/-0.50	
M8PFOA	940578.6	3.405067	1,022,909.00	3.493867	92	50 - 150	-0.0888	+/-0.50	
M8PFOS	134843.3	3.612217	147,936.00	3.684083	91	50 - 150	-0.0719	+/-0.50	
M9PFNA	852928.9	3.613267	891,883.00	3.685133	96	50 - 150	-0.0719	+/-0.50	
MPFDoA	1437229	4.048666	1,396,075.00	4.128783	103	50 - 150	-0.0801	+/-0.50	
d5-NEtFOSAA	305503.3	3.913533	289,504.00	3.993467	106	50 - 150	-0.0799	+/-0.50	
d3-NMeFOSAA	351980.8	3.841733	319,952.00	3.913883	110	50 - 150	-0.0721	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
54MTN S-9 (0-12) (21J1975-06)			Lab File ID: 21J1975-06.d			Analyzed: 11/12/21 12:44			
M8FOSA	356378.1	3.956583	434,290.00	4.036517	82	50 - 150	-0.0799	+/-0.50	
M2-4:2FTS	136202.4	2.349033	199,038.00	2.570733	68	50 - 150	-0.2217	+/-0.50	
M2PFTA	1452419	4.297266	1,748,768.00	4.362167	83	50 - 150	-0.0649	+/-0.50	
M2-8:2FTS	341962	3.778883	219,119.00	3.842967	156	50 - 150	-0.0641	+/-0.50	*
MPFBA	633614.4	1.050167	744,445.00	1.100017	85	50 - 150	-0.0499	+/-0.50	
M3HFPO-DA	189251.1	2.691233	271,282.00	2.904767	70	50 - 150	-0.2135	+/-0.50	
M6PFDA	992706.8	3.771433	1,013,901.00	3.84345	98	50 - 150	-0.0720	+/-0.50	
M3PFBS	144747.9	1.77785	170,351.00	1.96145	85	50 - 150	-0.1836	+/-0.50	
M7PFUnA	1233815	3.91405	1,405,982.00	3.986	88	50 - 150	-0.0720	+/-0.50	
M2-6:2FTS	111144	3.404383	123,278.00	3.48535	90	50 - 150	-0.0810	+/-0.50	
M5PFPeA	609256.4	1.623833	749,755.00	1.7826	81	50 - 150	-0.1588	+/-0.50	
M5PFHxA	828924.8	2.424267	999,321.00	2.663233	83	50 - 150	-0.2390	+/-0.50	
M3PFHxS	107563.6	3.153433	126,860.00	3.25875	85	50 - 150	-0.1053	+/-0.50	
M4PFHpA	838050.9	3.113417	1,062,495.00	3.227617	79	50 - 150	-0.1142	+/-0.50	
M8PFOA	842816.7	3.421167	1,022,909.00	3.493867	82	50 - 150	-0.0727	+/-0.50	
M8PFOS	126713	3.6202	147,936.00	3.684083	86	50 - 150	-0.0639	+/-0.50	
M9PFNA	748742	3.62125	891,883.00	3.685133	84	50 - 150	-0.0639	+/-0.50	
MPFDoA	1288802	4.056667	1,396,075.00	4.128783	92	50 - 150	-0.0721	+/-0.50	
d5-NEtFOSAA	258829.3	3.921517	289,504.00	3.993467	89	50 - 150	-0.0719	+/-0.50	
d3-NMeFOSAA	296477.6	3.841733	319,952.00	3.913883	93	50 - 150	-0.0721	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
54MTN S-9 (12-24) (21J1975-07)			Lab File ID: 21J1975-07.d			Analyzed: 11/12/21 12:52			
M8FOSA	389958.7	3.956583	434,290.00	4.036517	90	50 - 150	-0.0799	+/-0.50	
M2-4:2FTS	154154.5	2.349033	199,038.00	2.570733	77	50 - 150	-0.2217	+/-0.50	
M2PFTA	1738933	4.297266	1,748,768.00	4.362167	99	50 - 150	-0.0649	+/-0.50	
M2-8:2FTS	382920	3.770917	219,119.00	3.842967	175	50 - 150	-0.0720	+/-0.50	*
MPFBA	706392.8	1.050167	744,445.00	1.100017	95	50 - 150	-0.0499	+/-0.50	
M3HFPO-DA	228559.8	2.691233	271,282.00	2.904767	84	50 - 150	-0.2135	+/-0.50	
M6PFDA	1140109	3.771433	1,013,901.00	3.84345	112	50 - 150	-0.0720	+/-0.50	
M3PFBS	159144.1	1.787233	170,351.00	1.96145	93	50 - 150	-0.1742	+/-0.50	
M7PFUnA	1402379	3.91405	1,405,982.00	3.986	100	50 - 150	-0.0720	+/-0.50	
M2-6:2FTS	139080.3	3.404383	123,278.00	3.48535	113	50 - 150	-0.0810	+/-0.50	
M5PFPeA	692530.3	1.6321	749,755.00	1.7826	92	50 - 150	-0.1505	+/-0.50	
M5PFHxA	933275.5	2.432467	999,321.00	2.663233	93	50 - 150	-0.2308	+/-0.50	
M3PFHxS	123359.9	3.14535	126,860.00	3.25875	97	50 - 150	-0.1134	+/-0.50	
M4PFHpA	963328.4	3.105283	1,062,495.00	3.227617	91	50 - 150	-0.1223	+/-0.50	
M8PFOA	964746	3.413117	1,022,909.00	3.493867	94	50 - 150	-0.0807	+/-0.50	
M8PFOS	132288.8	3.620217	147,936.00	3.684083	89	50 - 150	-0.0639	+/-0.50	
M9PFNA	867830.8	3.613267	891,883.00	3.685133	97	50 - 150	-0.0719	+/-0.50	
MPFDoA	1439978	4.048666	1,396,075.00	4.128783	103	50 - 150	-0.0801	+/-0.50	
d5-NEtFOSAA	318390.4	3.921517	289,504.00	3.993467	110	50 - 150	-0.0719	+/-0.50	
d3-NMeFOSAA	354686.4	3.841733	319,952.00	3.913883	111	50 - 150	-0.0721	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
54MTN S-10 (0-12) (21J1975-08)									
			Lab File ID: 21J1975-08.d			Analyzed: 11/12/21 12:59			
M8FOSA	388542	3.956583	434,290.00	4.036517	89	50 - 150	-0.0799	+/-0.50	
M2-4:2FTS	161460.8	2.349033	199,038.00	2.570733	81	50 - 150	-0.2217	+/-0.50	
M2PFTA	1750213	4.297266	1,748,768.00	4.362167	100	50 - 150	-0.0649	+/-0.50	
M2-8:2FTS	328421.2	3.770917	219,119.00	3.842967	150	50 - 150	-0.0720	+/-0.50	
MPFBA	723158.6	1.050167	744,445.00	1.100017	97	50 - 150	-0.0499	+/-0.50	
M3HFPO-DA	225565.9	2.691233	271,282.00	2.904767	83	50 - 150	-0.2135	+/-0.50	
M6PFDA	1113398	3.771433	1,013,901.00	3.84345	110	50 - 150	-0.0720	+/-0.50	
M3PFBS	159063.1	1.787233	170,351.00	1.96145	93	50 - 150	-0.1742	+/-0.50	
M7PFUnA	1362440	3.92205	1,405,982.00	3.986	97	50 - 150	-0.0640	+/-0.50	
M2-6:2FTS	119922.1	3.4044	123,278.00	3.48535	97	50 - 150	-0.0810	+/-0.50	
M5PFPeA	689752.6	1.6321	749,755.00	1.7826	92	50 - 150	-0.1505	+/-0.50	
M5PFHxA	936521.3	2.432467	999,321.00	2.663233	94	50 - 150	-0.2308	+/-0.50	
M3PFHxS	121109.9	3.153433	126,860.00	3.25875	95	50 - 150	-0.1053	+/-0.50	
M4PFHpA	965898.6	3.105283	1,062,495.00	3.227617	91	50 - 150	-0.1223	+/-0.50	
M8PFOA	961326.1	3.413117	1,022,909.00	3.493867	94	50 - 150	-0.0807	+/-0.50	
M8PFOS	133176.3	3.620217	147,936.00	3.684083	90	50 - 150	-0.0639	+/-0.50	
M9PFNA	830511.8	3.62125	891,883.00	3.685133	93	50 - 150	-0.0639	+/-0.50	
MPFDoA	1404165	4.056667	1,396,075.00	4.128783	101	50 - 150	-0.0721	+/-0.50	
d5-NEtFOSAA	291936.1	3.921517	289,504.00	3.993467	101	50 - 150	-0.0719	+/-0.50	
d3-NMeFOSAA	330503.3	3.8497	319,952.00	3.913883	103	50 - 150	-0.0642	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
54MTN S-10 (12-24) (21J1975-09)			Lab File ID: 21J1975-09.d			Analyzed: 11/12/21 13:06			
M8FOSA	386493	3.956583	434,290.00	4.036517	89	50 - 150	-0.0799	+/-0.50	
M2-4:2FTS	147271.8	2.349033	199,038.00	2.570733	74	50 - 150	-0.2217	+/-0.50	
M2PFTA	1649314	4.297266	1,748,768.00	4.362167	94	50 - 150	-0.0649	+/-0.50	
M2-8:2FTS	360868	3.778883	219,119.00	3.842967	165	50 - 150	-0.0641	+/-0.50	*
MPFBA	673333.3	1.050167	744,445.00	1.100017	90	50 - 150	-0.0499	+/-0.50	
M3HFPO-DA	203832.6	2.699433	271,282.00	2.904767	75	50 - 150	-0.2053	+/-0.50	
M6PFDA	1082116	3.7794	1,013,901.00	3.84345	107	50 - 150	-0.0640	+/-0.50	
M3PFBS	150965.1	1.787233	170,351.00	1.96145	89	50 - 150	-0.1742	+/-0.50	
M7PFUnA	1328095	3.92205	1,405,982.00	3.986	94	50 - 150	-0.0640	+/-0.50	
M2-6:2FTS	124019.4	3.41245	123,278.00	3.48535	101	50 - 150	-0.0729	+/-0.50	
M5PFPeA	652848.9	1.6321	749,755.00	1.7826	87	50 - 150	-0.1505	+/-0.50	
M5PFHxA	875835.8	2.432467	999,321.00	2.663233	88	50 - 150	-0.2308	+/-0.50	
M3PFHxS	117956.1	3.153433	126,860.00	3.25875	93	50 - 150	-0.1053	+/-0.50	
M4PFHpA	902967.9	3.113417	1,062,495.00	3.227617	85	50 - 150	-0.1142	+/-0.50	
M8PFOA	913989.6	3.421167	1,022,909.00	3.493867	89	50 - 150	-0.0727	+/-0.50	
M8PFOS	130053	3.6202	147,936.00	3.684083	88	50 - 150	-0.0639	+/-0.50	
M9PFNA	804100.2	3.62125	891,883.00	3.685133	90	50 - 150	-0.0639	+/-0.50	
MPFDoA	1412210	4.056667	1,396,075.00	4.128783	101	50 - 150	-0.0721	+/-0.50	
d5-NEtFOSAA	290193.9	3.929517	289,504.00	3.993467	100	50 - 150	-0.0639	+/-0.50	
d3-NMeFOSAA	347261.3	3.849683	319,952.00	3.913883	109	50 - 150	-0.0642	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
54MTN S-11 (0-12) (21J1975-10)			Lab File ID: 21J1975-10.d		Analyzed: 11/12/21 13:13				
M8FOSA	381838.3	3.964583	434,290.00	4.036517	88	50 - 150	-0.0719	+/-0.50	
M2-4:2FTS	150247.2	2.357183	199,038.00	2.570733	75	50 - 150	-0.2136	+/-0.50	
M2PFTA	1636176	4.297266	1,748,768.00	4.362167	94	50 - 150	-0.0649	+/-0.50	
M2-8:2FTS	337705.3	3.778883	219,119.00	3.842967	154	50 - 150	-0.0641	+/-0.50	*
MPFBA	690894.3	1.050167	744,445.00	1.100017	93	50 - 150	-0.0499	+/-0.50	
M3HFPO-DA	204391.3	2.691233	271,282.00	2.904767	75	50 - 150	-0.2135	+/-0.50	
M6PFDA	1075528	3.7794	1,013,901.00	3.84345	106	50 - 150	-0.0640	+/-0.50	
M3PFBS	151850.1	1.787233	170,351.00	1.96145	89	50 - 150	-0.1742	+/-0.50	
M7PFUnA	1302697	3.92205	1,405,982.00	3.986	93	50 - 150	-0.0640	+/-0.50	
M2-6:2FTS	120563.9	3.404383	123,278.00	3.48535	98	50 - 150	-0.0810	+/-0.50	
M5PFPeA	657767.7	1.6321	749,755.00	1.7826	88	50 - 150	-0.1505	+/-0.50	
M5PFHxA	885888.8	2.432467	999,321.00	2.663233	89	50 - 150	-0.2308	+/-0.50	
M3PFHxS	113067.5	3.153433	126,860.00	3.25875	89	50 - 150	-0.1053	+/-0.50	
M4PFHpA	908234.9	3.113417	1,062,495.00	3.227617	85	50 - 150	-0.1142	+/-0.50	
M8PFOA	918110.1	3.421167	1,022,909.00	3.493867	90	50 - 150	-0.0727	+/-0.50	
M8PFOS	133905.2	3.6202	147,936.00	3.684083	91	50 - 150	-0.0639	+/-0.50	
M9PFNA	825200.4	3.62125	891,883.00	3.685133	93	50 - 150	-0.0639	+/-0.50	
MPFDoA	1404187	4.056667	1,396,075.00	4.128783	101	50 - 150	-0.0721	+/-0.50	
d5-NEtFOSAA	292628.6	3.929517	289,504.00	3.993467	101	50 - 150	-0.0639	+/-0.50	
d3-NMeFOSAA	336097.2	3.8497	319,952.00	3.913883	105	50 - 150	-0.0642	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
54MTN S-11 (12-24) (21J1975-11)									
			Lab File ID: 21J1975-11.d			Analyzed: 11/12/21 13:28			
M8FOSA	398887.5	3.956583	434,290.00	3.964583	92	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	157076.4	2.357183	199,038.00	2.357183	79	50 - 150	0.0000	+/-0.50	
M2PFTA	1639259	4.297266	1,748,768.00	4.297266	94	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	337945.3	3.770917	219,119.00	3.778883	154	50 - 150	-0.0080	+/-0.50	*
MPFBA	723486.2	1.058467	744,445.00	1.050167	97	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	206289	2.699433	271,282.00	2.699433	76	50 - 150	0.0000	+/-0.50	
M6PFDA	1118772	3.771433	1,013,901.00	3.7794	110	50 - 150	-0.0080	+/-0.50	
M3PFBS	158867.8	1.795517	170,351.00	1.787233	93	50 - 150	0.0083	+/-0.50	
M7PFUnA	1371719	3.91405	1,405,982.00	3.92205	98	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	118128.3	3.396333	123,278.00	3.4044	96	50 - 150	-0.0081	+/-0.50	
M5PFPeA	696074.5	1.640383	749,755.00	1.6321	93	50 - 150	0.0083	+/-0.50	
M5PFHxA	917740.2	2.440933	999,321.00	2.432467	92	50 - 150	0.0085	+/-0.50	
M3PFHxS	121500.3	3.153433	126,860.00	3.153433	96	50 - 150	0.0000	+/-0.50	
M4PFHpA	960142.4	3.105283	1,062,495.00	3.113417	90	50 - 150	-0.0081	+/-0.50	
M8PFOA	949193.4	3.413117	1,022,909.00	3.421167	93	50 - 150	-0.0080	+/-0.50	
M8PFOS	140734.4	3.6202	147,936.00	3.620217	95	50 - 150	0.0000	+/-0.50	
M9PFNA	866515.8	3.62125	891,883.00	3.62125	97	50 - 150	0.0000	+/-0.50	
MPFDoA	1373363	4.056667	1,396,075.00	4.056667	98	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	291153	3.921517	289,504.00	3.929517	101	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	334534.7	3.8497	319,952.00	3.8497	105	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
54MTN S-12 (0-12) (21J1975-12)									
			Lab File ID: 21J1975-12.d			Analyzed: 11/12/21 13:35			
M8FOSA	380025	3.964583	434,290.00	3.964583	88	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	137699.8	2.365383	199,038.00	2.357183	69	50 - 150	0.0082	+/-0.50	
M2PFTA	1428414	4.305333	1,748,768.00	4.297266	82	50 - 150	0.0081	+/-0.50	
M2-8:2FTS	291370.6	3.778883	219,119.00	3.778883	133	50 - 150	0.0000	+/-0.50	
MPFBA	681227.1	1.050167	744,445.00	1.050167	92	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	208815.4	2.708367	271,282.00	2.699433	77	50 - 150	0.0089	+/-0.50	
M6PFDA	1063316	3.7794	1,013,901.00	3.7794	105	50 - 150	0.0000	+/-0.50	
M3PFBS	150513.9	1.795517	170,351.00	1.787233	88	50 - 150	0.0083	+/-0.50	
M7PFUnA	1288696	3.92205	1,405,982.00	3.92205	92	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	110114.2	3.41245	123,278.00	3.4044	89	50 - 150	0.0081	+/-0.50	
M5PFPeA	656022.8	1.640383	749,755.00	1.6321	87	50 - 150	0.0083	+/-0.50	
M5PFHxA	874448.1	2.440933	999,321.00	2.432467	88	50 - 150	0.0085	+/-0.50	
M3PFHxS	114674.5	3.1615	126,860.00	3.153433	90	50 - 150	0.0081	+/-0.50	
M4PFHpA	904716.9	3.113417	1,062,495.00	3.113417	85	50 - 150	0.0000	+/-0.50	
M8PFOA	886006.1	3.421167	1,022,909.00	3.421167	87	50 - 150	0.0000	+/-0.50	
M8PFOS	129146.7	3.6282	147,936.00	3.620217	87	50 - 150	0.0080	+/-0.50	
M9PFNA	801558.9	3.629233	891,883.00	3.62125	90	50 - 150	0.0080	+/-0.50	
MPFDoA	1267831	4.06465	1,396,075.00	4.056667	91	50 - 150	0.0080	+/-0.50	
d5-NEtFOSAA	241520.7	3.929517	289,504.00	3.929517	83	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	278929.3	3.85765	319,952.00	3.8497	87	50 - 150	0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
54MTN S-13 (0-12) (21J1975-14) Lab File ID: 21J1975-14.d Analyzed: 11/12/21 13:42									
M8FOSA	375116	3.964583	434,290.00	3.964583	86	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	146702.3	2.365383	199,038.00	2.357183	74	50 - 150	0.0082	+/-0.50	
M2PFfA	1606638	4.305333	1,748,768.00	4.297266	92	50 - 150	0.0081	+/-0.50	
M2-8:2FTS	409063.1	3.78685	219,119.00	3.778883	187	50 - 150	0.0080	+/-0.50	*
MPFBA	668490.1	1.058467	744,445.00	1.050167	90	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	192485.5	2.708367	271,282.00	2.699433	71	50 - 150	0.0089	+/-0.50	
M6PFDA	1079840	3.7794	1,013,901.00	3.7794	107	50 - 150	0.0000	+/-0.50	
M3PFBS	148646.4	1.795517	170,351.00	1.787233	87	50 - 150	0.0083	+/-0.50	
M7PFUnA	1306655	3.92205	1,405,982.00	3.92205	93	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	143422.2	3.41245	123,278.00	3.4044	116	50 - 150	0.0081	+/-0.50	
M5PFPeA	648178.9	1.640383	749,755.00	1.6321	86	50 - 150	0.0083	+/-0.50	
M5PFHxA	874248.6	2.440933	999,321.00	2.432467	87	50 - 150	0.0085	+/-0.50	
M3PFHxS	112566.7	3.1615	126,860.00	3.153433	89	50 - 150	0.0081	+/-0.50	
M4PFHpA	907426.1	3.113417	1,062,495.00	3.113417	85	50 - 150	0.0000	+/-0.50	
M8PFOA	910321.1	3.421167	1,022,909.00	3.421167	89	50 - 150	0.0000	+/-0.50	
M8PFOS	132002.7	3.6282	147,936.00	3.620217	89	50 - 150	0.0080	+/-0.50	
M9PFNA	787379.3	3.629233	891,883.00	3.62125	88	50 - 150	0.0080	+/-0.50	
MPFDoA	1324634	4.06465	1,396,075.00	4.056667	95	50 - 150	0.0080	+/-0.50	
d5-NEtFOSAA	298404.6	3.929517	289,504.00	3.929517	103	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	339794.3	3.85765	319,952.00	3.8497	106	50 - 150	0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
54MTN S-13 (12-24) (21J1975-15)			Lab File ID: 21J1975-15.d			Analyzed: 11/12/21 13:49			
M8FOSA	369356.8	3.972567	434,290.00	3.964583	85	50 - 150	0.0080	+/-0.50	
M2-4:2FTS	144611.3	2.357183	199,038.00	2.357183	73	50 - 150	0.0000	+/-0.50	
M2PFTA	1544102	4.305333	1,748,768.00	4.297266	88	50 - 150	0.0081	+/-0.50	
M2-8:2FTS	335241.3	3.78685	219,119.00	3.778883	153	50 - 150	0.0080	+/-0.50	*
MPFBA	682158.8	1.050167	744,445.00	1.050167	92	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	203961.5	2.708367	271,282.00	2.699433	75	50 - 150	0.0089	+/-0.50	
M6PFDA	1077267	3.787367	1,013,901.00	3.7794	106	50 - 150	0.0080	+/-0.50	
M3PFBS	149598.7	1.795517	170,351.00	1.787233	88	50 - 150	0.0083	+/-0.50	
M7PFUnA	1251267	3.930033	1,405,982.00	3.92205	89	50 - 150	0.0080	+/-0.50	
M2-6:2FTS	123593.2	3.41245	123,278.00	3.4044	100	50 - 150	0.0081	+/-0.50	
M5PFPeA	655663.5	1.6321	749,755.00	1.6321	87	50 - 150	0.0000	+/-0.50	
M5PFHxA	878653.5	2.440933	999,321.00	2.432467	88	50 - 150	0.0085	+/-0.50	
M3PFHxS	115233.9	3.1615	126,860.00	3.153433	91	50 - 150	0.0081	+/-0.50	
M4PFHpA	886857.8	3.122317	1,062,495.00	3.113417	83	50 - 150	0.0089	+/-0.50	
M8PFOA	894412.7	3.421167	1,022,909.00	3.421167	87	50 - 150	0.0000	+/-0.50	
M8PFOS	128222.8	3.6282	147,936.00	3.620217	87	50 - 150	0.0080	+/-0.50	
M9PFNA	782614.1	3.629233	891,883.00	3.62125	88	50 - 150	0.0080	+/-0.50	
MPFDoA	1330465	4.06465	1,396,075.00	4.056667	95	50 - 150	0.0080	+/-0.50	
d5-NEtFOSAA	290043.8	3.9375	289,504.00	3.929517	100	50 - 150	0.0080	+/-0.50	
d3-NMeFOSAA	329270.7	3.85765	319,952.00	3.8497	103	50 - 150	0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
54MTN S-14 (0-6) (21J1975-16)									
			Lab File ID: 21J1975-16.d			Analyzed: 11/12/21 13:56			
M8FOSA	329163.3	3.964583	434,290.00	3.964583	76	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	129254.7	2.349033	199,038.00	2.357183	65	50 - 150	-0.0082	+/-0.50	
M2PFTA	1329733	4.305333	1,748,768.00	4.297266	76	50 - 150	0.0081	+/-0.50	
M2-8:2FTS	311658.5	3.778883	219,119.00	3.778883	142	50 - 150	0.0000	+/-0.50	
MPFBA	575293.6	1.050167	744,445.00	1.050167	77	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	190608.3	2.691233	271,282.00	2.699433	70	50 - 150	-0.0082	+/-0.50	
M6PFDA	898735.2	3.7794	1,013,901.00	3.7794	89	50 - 150	0.0000	+/-0.50	
M3PFBS	129546.8	1.787233	170,351.00	1.787233	76	50 - 150	0.0000	+/-0.50	
M7PFUnA	1121668	3.92205	1,405,982.00	3.92205	80	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	119077.8	3.404383	123,278.00	3.4044	97	50 - 150	0.0000	+/-0.50	
M5PFPeA	565755.4	1.6321	749,755.00	1.6321	75	50 - 150	0.0000	+/-0.50	
M5PFHxA	758263.6	2.432467	999,321.00	2.432467	76	50 - 150	0.0000	+/-0.50	
M3PFHxS	99911.16	3.153433	126,860.00	3.153433	79	50 - 150	0.0000	+/-0.50	
M4PFHpA	766774.6	3.113417	1,062,495.00	3.113417	72	50 - 150	0.0000	+/-0.50	
M8PFOA	779749.1	3.421167	1,022,909.00	3.421167	76	50 - 150	0.0000	+/-0.50	
M8PFOS	112269.2	3.6202	147,936.00	3.620217	76	50 - 150	0.0000	+/-0.50	
M9PFNA	729600	3.62125	891,883.00	3.62125	82	50 - 150	0.0000	+/-0.50	
MPFDoA	1195724	4.06465	1,396,075.00	4.056667	86	50 - 150	0.0080	+/-0.50	
d5-NEtFOSAA	230429.3	3.929517	289,504.00	3.929517	80	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	265370.2	3.8497	319,952.00	3.8497	83	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B294103-BLK1)			Lab File ID: B294103-BLK1.d			Analyzed: 11/12/21 11:47			
M8FOSA	446696.6	4.036517	434,290.00	4.036517	103	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	204693.9	2.570733	199,038.00	2.570733	103	50 - 150	0.0000	+/-0.50	
M2PFTA	1803721	4.362167	1,748,768.00	4.362167	103	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	226876.5	3.842967	219,119.00	3.842967	104	50 - 150	0.0000	+/-0.50	
MPFBA	801209.3	1.100017	744,445.00	1.100017	108	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	268384.3	2.904767	271,282.00	2.904767	99	50 - 150	0.0000	+/-0.50	
M6PFDA	1153765	3.84345	1,013,901.00	3.84345	114	50 - 150	0.0000	+/-0.50	
M3PFBS	181029.1	1.96145	170,351.00	1.96145	106	50 - 150	0.0000	+/-0.50	
M7PFUnA	1540729	3.986	1,405,982.00	3.986	110	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	131766.7	3.48535	123,278.00	3.48535	107	50 - 150	0.0000	+/-0.50	
M5PFPeA	788534	1.7826	749,755.00	1.7826	105	50 - 150	0.0000	+/-0.50	
M5PFHxA	1075116	2.663233	999,321.00	2.663233	108	50 - 150	0.0000	+/-0.50	
M3PFHxS	137621.2	3.258733	126,860.00	3.25875	108	50 - 150	0.0000	+/-0.50	
M4PFHpA	1111543	3.227617	1,062,495.00	3.227617	105	50 - 150	0.0000	+/-0.50	
M8PFOA	1072593	3.493867	1,022,909.00	3.493867	105	50 - 150	0.0000	+/-0.50	
M8PFOS	154497.3	3.684083	147,936.00	3.684083	104	50 - 150	0.0000	+/-0.50	
M9PFNA	974969.2	3.685133	891,883.00	3.685133	109	50 - 150	0.0000	+/-0.50	
MPFDoA	1562602	4.128783	1,396,075.00	4.128783	112	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	300771.8	3.993467	289,504.00	3.993467	104	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	318412.5	3.913883	319,952.00	3.913883	100	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B294103-BS1)			Lab File ID: B294103-BS1.d			Analyzed: 11/12/21 11:40			
M8FOSA	443317.7	4.036517	434,290.00	4.036517	102	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	203794.8	2.57895	199,038.00	2.570733	102	50 - 150	0.0082	+/-0.50	
M2PFTA	1820121	4.362167	1,748,768.00	4.362167	104	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	225196.6	3.842967	219,119.00	3.842967	103	50 - 150	0.0000	+/-0.50	
MPFBA	789011.4	1.108317	744,445.00	1.100017	106	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	251147.2	2.904767	271,282.00	2.904767	93	50 - 150	0.0000	+/-0.50	
M6PFDA	1128130	3.84345	1,013,901.00	3.84345	111	50 - 150	0.0000	+/-0.50	
M3PFBS	177220.8	1.969733	170,351.00	1.96145	104	50 - 150	0.0083	+/-0.50	
M7PFUnA	1441433	3.986	1,405,982.00	3.986	103	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	130527.7	3.48535	123,278.00	3.48535	106	50 - 150	0.0000	+/-0.50	
M5PFPeA	777922.6	1.7826	749,755.00	1.7826	104	50 - 150	0.0000	+/-0.50	
M5PFHxA	1055833	2.663233	999,321.00	2.663233	106	50 - 150	0.0000	+/-0.50	
M3PFHxS	139101	3.25875	126,860.00	3.25875	110	50 - 150	0.0000	+/-0.50	
M4PFHpA	1092543	3.227617	1,062,495.00	3.227617	103	50 - 150	0.0000	+/-0.50	
M8PFOA	1024824	3.493867	1,022,909.00	3.493867	100	50 - 150	0.0000	+/-0.50	
M8PFOS	151764.5	3.684083	147,936.00	3.684083	103	50 - 150	0.0000	+/-0.50	
M9PFNA	939160	3.685133	891,883.00	3.685133	105	50 - 150	0.0000	+/-0.50	
MPFDoA	1452871	4.128783	1,396,075.00	4.128783	104	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	281643.7	3.993467	289,504.00	3.993467	97	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	320319.6	3.913883	319,952.00	3.913883	100	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Matrix Spike (B294103-MS1)									
			Lab File ID: B294103-MS1.d			Analyzed: 11/12/21 11:54			
M8FOSA	384627.9	4.036517	434,290.00	4.036517	89	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	144784.1	2.570733	199,038.00	2.570733	73	50 - 150	0.0000	+/-0.50	
M2PFTA	1774678	4.362167	1,748,768.00	4.362167	101	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	265639.7	3.842967	219,119.00	3.842967	121	50 - 150	0.0000	+/-0.50	
MPFBA	652125.1	1.100017	744,445.00	1.100017	88	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	212198.8	2.896583	271,282.00	2.904767	78	50 - 150	-0.0082	+/-0.50	
M6PFDA	1015350	3.84345	1,013,901.00	3.84345	100	50 - 150	0.0000	+/-0.50	
M3PFBS	160280.9	1.96145	170,351.00	1.96145	94	50 - 150	0.0000	+/-0.50	
M7PFUnA	1344148	3.986	1,405,982.00	3.986	96	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	132841.5	3.48535	123,278.00	3.48535	108	50 - 150	0.0000	+/-0.50	
M5PFPeA	665504.9	1.7826	749,755.00	1.7826	89	50 - 150	0.0000	+/-0.50	
M5PFHxA	893843	2.655	999,321.00	2.663233	89	50 - 150	-0.0082	+/-0.50	
M3PFHxS	120794.1	3.25875	126,860.00	3.25875	95	50 - 150	0.0000	+/-0.50	
M4PFHpA	946110.3	3.227617	1,062,495.00	3.227617	89	50 - 150	0.0000	+/-0.50	
M8PFOA	905159.7	3.493867	1,022,909.00	3.493867	88	50 - 150	0.0000	+/-0.50	
M8PFOS	137803.1	3.684083	147,936.00	3.684083	93	50 - 150	0.0000	+/-0.50	
M9PFNA	783764.8	3.685133	891,883.00	3.685133	88	50 - 150	0.0000	+/-0.50	
MPFDoA	1440925	4.120767	1,396,075.00	4.128783	103	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	296931.8	3.993467	289,504.00	3.993467	103	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	344221.4	3.913883	319,952.00	3.913883	108	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Matrix Spike Dup (B294103-MSD1)									
			Lab File ID: B294103-MSD1.d			Analyzed: 11/12/21 12:01			
M8FOSA	361441.7	4.036517	434,290.00	4.036517	83	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	149280.9	2.570733	199,038.00	2.570733	75	50 - 150	0.0000	+/-0.50	
M2PFTA	1736789	4.362167	1,748,768.00	4.362167	99	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	301804.4	3.842967	219,119.00	3.842967	138	50 - 150	0.0000	+/-0.50	
MPFBA	651382.1	1.100017	744,445.00	1.100017	87	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	203431.7	2.896583	271,282.00	2.904767	75	50 - 150	-0.0082	+/-0.50	
M6PFDA	1019711	3.8355	1,013,901.00	3.84345	101	50 - 150	-0.0079	+/-0.50	
M3PFBS	162714.3	1.96145	170,351.00	1.96145	96	50 - 150	0.0000	+/-0.50	
M7PFUnA	1384524	3.986	1,405,982.00	3.986	98	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	136793.6	3.48535	123,278.00	3.48535	111	50 - 150	0.0000	+/-0.50	
M5PFPeA	656887.6	1.7743	749,755.00	1.7826	88	50 - 150	-0.0083	+/-0.50	
M5PFHxA	887361.9	2.655	999,321.00	2.663233	89	50 - 150	-0.0082	+/-0.50	
M3PFHxS	121085.5	3.25875	126,860.00	3.25875	95	50 - 150	0.0000	+/-0.50	
M4PFHpA	946815.5	3.219533	1,062,495.00	3.227617	89	50 - 150	-0.0081	+/-0.50	
M8PFOA	906641.1	3.493867	1,022,909.00	3.493867	89	50 - 150	0.0000	+/-0.50	
M8PFOS	136798.9	3.684083	147,936.00	3.684083	92	50 - 150	0.0000	+/-0.50	
M9PFNA	826447.8	3.685133	891,883.00	3.685133	93	50 - 150	0.0000	+/-0.50	
MPFDoA	1414706	4.120767	1,396,075.00	4.128783	101	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	306390.5	3.993467	289,504.00	3.993467	106	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	360291.5	3.913883	319,952.00	3.913883	113	50 - 150	0.0000	+/-0.50	

CONTINUING CALIBRATION CHECK

SOP-466 PFAS

S065408-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	411	0.8628989	0.7767966		-17.7	30
Perfluorobutanesulfonic acid (PFBS)	A	444	376	0.9900012	0.8964929		-15.3	30
Perfluoropentanoic acid (PFPeA)	A	500	416	0.9353824	0.8516842		-16.7	30
Perfluorohexanoic acid (PFHxA)	A	500	405	0.86678	0.7790904		-19.1	30
11Cl-PF3OUdS (F53B Minor)	A	472	453	1.835659	1.784002		-4.0	30
9Cl-PF3ONS (F53B Major)	A	466	414	3.897292	3.461266		-11.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	382	1.602632	1.371496		-19.1	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	446	2.979159	0.1298651		-10.8	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	469	0.7665044	0.8350472		-2.2	30
Perfluorodecanoic acid (PFDA)	A	500	447	0.929213	0.9249802		-10.7	30
Perfluorododecanoic acid (PFDoA)	A	500	428	0.9361562	0.8564361		-14.4	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	397	3.93233	3.43245		-10.8	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	444	0.4568315	0.4364572		-6.7	30
N-EtFOSAA	A	500	423	0.9836556	0.8401595		-15.5	30
N-MeFOSAA	A	500	357	1.027301	0.8140062		-28.7	30
Perfluorotetradecanoic acid (PFTA)	A	500	407	0.8542676	0.7801978		-18.6	30
Perfluorotridecanoic acid (PFTrDA)	A	500	404	1.009812	0.9179308		-19.3	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	392	1.061084	0.9770584		-16.1	30
Perfluorodecanesulfonic acid (PFDS)	A	482	441	0.6287667	0.594456		-8.4	30
Perfluorooctanesulfonamide (FOSA)	A	500	421	0.8334166	0.7733729		-15.9	30
Perfluorononanesulfonic acid (PFNS)	A	481	445	0.319818	0.2991542		-7.6	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	485	0.3462983	0.320464		-3.0	30
Perfluoro-1-butanesulfonamide (FBSA)	A	500	443	0.3044628	0.2918565		-11.5	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	410	0.9652933	0.9274793		-10.3	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	452	0.495495	0.4480754		-9.5	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	427	0.5879048	0.5012978		-14.6	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	415	1.004025	0.9515162		-12.9	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	409	0.9760894	0.9428846		-13.0	30
Perfluoroundecanoic acid (PFUnA)	A	500	384	0.8528971	0.7198819		-23.1	30
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	A	500	459	0.3237613	0.3001851		-8.2	30
Perfluoroheptanoic acid (PFHpA)	A	500	447	0.9139933	0.8204578		-10.5	30
Perfluorooctanoic acid (PFOA)	A	500	467	0.8653288	0.8117122		-6.6	30
Perfluorooctanesulfonic acid (PFOS)	A	464	374	0.9382121	0.8073275		-19.5	30
Perfluorononanoic acid (PFNA)	A	500	422	0.938444	0.8150103		-15.6	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-466 PFAS

S065408-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2300	0.8628989	0.8691334		-8.0	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2080	0.9900012	0.9907277		-6.4	30
Perfluoropentanoic acid (PFPeA)	A	2500	2260	0.9353824	0.9249798		-9.6	30
Perfluorohexanoic acid (PFHxA)	A	2500	2310	0.86678	0.8913512		-7.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2490	1.835659	1.973944		5.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2470	3.897292	4.161085		5.8	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2200	1.602632	1.583869		-6.6	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2710	2.979159	0.1591452		8.3	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2360	0.7665044	0.8324362		-1.5	30
Perfluorodecanoic acid (PFDA)	A	2500	2150	0.929213	0.8897039		-14.1	30
Perfluorododecanoic acid (PFDoA)	A	2500	2250	0.9361562	0.9001838		-10.0	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2250	3.93233	3.930817		1.2	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2500	0.4568315	0.4909055		4.9	30
N-EtFOSAA	A	2500	2300	0.9836556	0.9185776		-8.0	30
N-MeFOSAA	A	2500	1910	1.027301	0.8741689		-23.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2230	0.8542676	0.8513289		-10.6	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2350	1.009812	1.06165		-5.9	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2300	0.6287667	0.6205874		-4.4	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2360	1.061084	1.163887		1.0	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2160	0.8334166	0.7924931		-13.8	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2550	0.319818	0.3442334		6.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2490	0.3462983	0.3332652		-0.3	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2260	0.3044628	0.2985782		-9.4	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	1650	0.9652933	0.7484342		-27.7	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2460	0.495495	0.4909987		-1.5	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2440	0.5879048	0.576857		-2.3	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2520	1.004025	1.141102		5.7	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2040	0.9760894	0.9420425		-13.1	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2220	0.8528971	0.8325959		-11.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2590	0.3237613	0.3414761		3.8	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2410	0.9139933	0.888773		-3.7	30
Perfluorooctanoic acid (PFOA)	A	2500	2510	0.8653288	0.881016		0.6	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2360	0.9382121	1.017665		1.5	30
Perfluorononanoic acid (PFNA)	A	2500	2450	0.938444	0.9476693		-2.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065408-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2300	0.8628989	0.8677844		-8.1	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2100	0.9900012	1.000094		-5.6	30
Perfluoropentanoic acid (PFPeA)	A	2500	2260	0.9353824	0.9257279		-9.5	30
Perfluorohexanoic acid (PFHxA)	A	2500	2240	0.86678	0.8612096		-10.5	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2560	1.835659	2.036757		8.7	30
9Cl-PF3ONS (F53B Major)	A	2330	2450	3.897292	4.130858		5.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2200	1.602632	1.582513		-6.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2580	2.979159	0.1517355		3.3	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2450	0.7665044	0.8635585		2.2	30
Perfluorodecanoic acid (PFDA)	A	2500	2180	0.929213	0.9044307		-12.7	30
Perfluorododecanoic acid (PFDoA)	A	2500	2270	0.9361562	0.9093539		-9.1	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2290	3.93233	3.999284		2.9	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2330	0.4568315	0.4574979		-2.2	30
N-EtFOSAA	A	2500	2240	0.9836556	0.8962744		-10.2	30
N-MeFOSAA	A	2500	2110	1.027301	0.964184		-15.5	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2230	0.8542676	0.8479232		-11.0	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2350	1.009812	1.059295		-6.1	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2300	0.6287667	0.6197956		-4.5	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2380	1.061084	1.172965		1.8	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2230	0.8334166	0.8205943		-10.7	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2420	0.319818	0.3258002		0.7	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2460	0.3462983	0.3286325		-1.7	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2200	0.3044628	0.2903457		-11.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	1610	0.9652933	0.7325575		-29.2	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2440	0.495495	0.4856665		-2.6	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2470	0.5879048	0.5843681		-1.0	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2330	1.004025	1.056201		-2.3	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	1960	0.9760894	0.9064954		-16.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2270	0.8528971	0.8488035		-9.4	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2560	0.3237613	0.3367714		2.4	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2490	0.9139933	0.9198631		-0.3	30
Perfluorooctanoic acid (PFOA)	A	2500	2500	0.8653288	0.8778018		0.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2240	0.9382121	0.9681817		-3.4	30
Perfluorononanoic acid (PFNA)	A	2500	2340	0.938444	0.9057678		-6.5	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SOP-466 PFAS in Soil</i>	
Perfluorobutanoic acid (PFBA)	NH-P
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluoropentanoic acid (PFPeA)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
11Cl-PF3OUdS (F53B Minor)	NH-P
9Cl-PF3ONS (F53B Major)	NH-P
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P
8:2 Fluorotelomersulfonic acid (8:2FTS A)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	NH-P
Perfluoroheptanesulfonic acid (PFHpS)	NH-P
N-EtFOSAA	NH-P
N-MeFOSAA	NH-P
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
4:2 Fluorotelomersulfonic acid (4:2FTS A)	NH-P
Perfluorodecanesulfonic acid (PFDS)	NH-P
Perfluorooctanesulfonamide (FOSA)	NH-P
Perfluorononanesulfonic acid (PFNS)	NH-P
Perfluoro-1-hexanesulfonamide (FHxSA)	NH-P
Perfluoro-1-butanefulfonamide (FBSA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
Perfluoro-4-oxapentanoic acid (PFMPA)	NH-P
Perfluoro-5-oxahexanoic acid (PFMBA)	NH-P
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P
Perfluoropetanesulfonic acid (PFPeS)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022



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Minneapolis, MN 55414

Doc # 381 Rev 4_01/08/2020

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Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>

CHAIN OF CUSTODY RECORD

ANALYSIS REQUESTED

2151975

Company Name: Tighe & Bond
Address: 120 Front Street, Worcester, MA 01610
Phone: 508-754-2201
Project Location: Princeton Soil Sampling - 54 Mountain
Project Number: P-0534017
Project Manager: Jeff Arps/Michael Scherer
Invoice Recipient: Tighe & Bond
Sampled By: M Scherer

Retention Time
7-Day 10-Day
PFAS 10-Day (std) Due Date:

Dissolved Metals Samples
 Field Filtered
 Lab to Filter

Isotope Approval Required
1-Day 3-Day
2-Day 4-Day
Orthophosphate Samples
 Field Filtered
 Lab to Filter

Data Delivery
Format: PDF EXCEL
Other: _____
PCB ONLY
SOXHLET
NON SOXHLET

CLP Like Data Pkg Required:
Email To: mjscherer@tighebond.com
Fax To #: _____

Matrix Code	PFAS (isotope dilution method)				
	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
S					
S					
S					
S					
S					
S					
S					
S					
S					
S					
S					
S					
S					
S					
S					
S					
S					
S					
S					
S					

² Preservation Code

Courier Use Only
Total Number Of:
VIALS _____
GLASS _____
PLASTIC _____
BACTERIA _____
ENCORE _____

Glassware in the fridge? Y / N _____
Glassware in freezer? Y / N _____
Prepackaged Cooler? Y / N _____

*Pace Analytical is not responsible for missing samples from prepacked coolers

¹ Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

Pace Analytical Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
1	54MTN S-5A (0-12)	10/28/21	1200	GRAB	S	U					
2	54MTN S-6 (6-12)		1230						1		
3	54MTN S-7 (0-12)		1300						1		
4	54MTN S-7 (12-24)		1330						1		
5	54MTN S-8 (0-12)		1400						1		
6	54MTN S-9 (0-12)		1430						1		
7	54 MTN S-9 (12-24)		1500						1		
8	54MTN S-10 (0-12)		1530						1		
9	54MTN S-10 (12-24)		1600						1		
10	54MTN S-11 (0-12)		1630						1		
11	54MTN S-11 (12-24)		1700						1		
	54MTN S-12 (0-12)		1730						1		

Relinquished by: (signature) *[Signature]* Date/Time: 10/29/21 1200
 Received by: (signature) *[Signature]* Date/Time: 10/29/21 1815
 Relinquished by: (signature) *[Signature]* Date/Time: 10/29/21 2035
 Received by: (signature) *[Signature]* Date/Time: 10/29/21 2035
 Relinquished by: (signature) _____ Date/Time: _____
 Received by: (signature) _____ Date/Time: _____
 Relinquished by: (signature) _____ Date/Time: _____
 Received by: (signature) _____ Date/Time: _____

Client Comments:

Detection Limit Requirements	Special Requirements
MA <input type="checkbox"/> AM-1 S-1 <input checked="" type="checkbox"/>	MA HCP Required <input type="checkbox"/>
	MCP Certification Form Required <input type="checkbox"/>
	CT RCP Required <input type="checkbox"/>
	RCP Certification Form Required <input type="checkbox"/>
Other: _____	MA State DW Required <input type="checkbox"/>
PWSID # _____	

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

RELAC and AIHA LAP, LLC Accredited

Project Entity:
 Government Municipality MWRA WRTA
 Federal 21 J School
 City Brownfield MBTA

Other:
 Chromatogram
 AIHA-LAP, LLC

² Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

Comments: client confirmed sample 13 is a repeat of sample 12. JLH 11/1/2021

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

Phone: 612-607-6400
Fax: 612-607-6344

<https://www.pacelabs.com/>

Pace Analytical
Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
Address: 120 Front Street, Worcester, MA 01610
Phone: 508-754-2201
Project Location: Princeton Soil Sampling - 54 Mountain
Project Number: Princeton, MA
Project Manager: Jeff Arps/Michael Scherer
Invoice Recipient: Tighe & Bond
Sampled By: M Scherer

CHAIN OF CUSTODY RECORD
1800 Elm Street SE
Minneapolis, MN 55414

Doc # 381 Rev 4_01/08/2020

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ANALYSIS REQUESTED

Pace Analytical Work Order #	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc. Code	PCB ONLY				PFS (isotope dilution method)	Preservation Code	
							VIALS	GLASS	PLASTIC	BACTERIA			
13	54MTN S-12 (0-12)	10/29/21	1800	GRAB	S	U							
14	54MTN S-13 (0-12)	10/29/21	1830	GRAB	S	U							
15	54MTN S-13 (12-24)	10/29/21	1900	GRAB	S	U							
16	54MTN S-14 (0-6)	10/29/21	1930	GRAB	S	U							

Retinquished by: (signature)	Date/Time: 10/29/21 12:00
Received by: (signature)	Date/Time: 10/29/21 18:15
Requested by: (signature)	Date/Time: 10/29/21 20:35
Received by: (signature)	Date/Time: 10/29/21 20:55
Retinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Retinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Special Requirements	MA ICP Required <input checked="" type="checkbox"/>	MA ICP Certification Form Required <input type="checkbox"/>	CT RCP Required <input type="checkbox"/>	RCP Certification Form Required <input type="checkbox"/>	MA State DIV Required <input type="checkbox"/>								
Project Entity	Government <input type="checkbox"/>	Federal <input type="checkbox"/>	City <input type="checkbox"/>	Municipality <input type="checkbox"/>	21 J <input type="checkbox"/>	Brownfield <input type="checkbox"/>	AWRA <input type="checkbox"/>	School <input type="checkbox"/>	MBTA <input type="checkbox"/>	WRTA <input type="checkbox"/>	Other <input type="checkbox"/>	Chromatogram <input type="checkbox"/>	AHHA-LAP, LLC <input type="checkbox"/>

Client Comments:

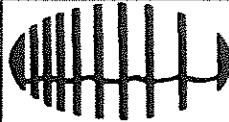
Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T 13
 Received By MA Date 10/29/11 Time 2035
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp -3.0
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? MA Were Samples Tampered with? MA
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? MA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? MA Acid _____ Base _____

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	15	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear
DI-		Other Glass		Other Plastic		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Unused Media

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear
DI-		Other Plastic		Other Glass		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Comments:

Sample S-12 (O-12) may be repeated on chain twice

November 15, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

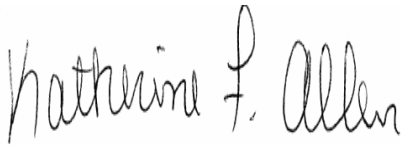
Project Location: 22 Mountain, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1976

Enclosed are results of analyses for samples as received by the laboratory on October 29, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian

Tighe & Bond, Inc. - Worcester
 120 Front St.
 Worcester, MA 01608-2303
 ATTN: Michael Scherer

REPORT DATE: 11/15/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1976

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 22 Mountain, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
22MTN S-1 (6-12)	21J1976-01	Soil		SM 2540G SOP-466 PFAS	
22MTN S-1 (12-24)	21J1976-02	Soil		SM 2540G SOP-466 PFAS	
22MTN S-3 (6-12)	21J1976-03	Soil		SM 2540G SOP-466 PFAS	
22MTN S-4 (6-12)	21J1976-04	Soil		SM 2540G SOP-466 PFAS	
22MTN S-4 (12-18)	21J1976-05	Soil		SM 2540G SOP-466 PFAS	
22MTN S-5 (6-12)	21J1976-06	Soil		SM 2540G SOP-466 PFAS	
22MTN S-5 (12-18)	21J1976-07	Soil		SM 2540G SOP-466 PFAS	
22MTN S-6 (6-12)	21J1976-08	Soil		SM 2540G SOP-466 PFAS	
22MTN S-7 (6-12)	21J1976-09	Soil		SM 2540G SOP-466 PFAS	
22MTN S-8 (6-12)	21J1976-10	Soil		SM 2540G SOP-466 PFAS	
22MTN S-8 (12-18)	21J1976-11	Soil		SM 2540G SOP-466 PFAS	
22MTN S-10 (0-6)	21J1976-12	Soil		SM 2540G SOP-466 PFAS	
22MTN S-11 (0-12)	21J1976-13	Soil		SM 2540G SOP-466 PFAS	
22MTN S-12 (0-12)	21J1976-14	Soil		SM 2540G SOP-466 PFAS	
22MTN S-13 (0-12)	21J1976-15	Soil		SM 2540G SOP-466 PFAS	
22MTN S-13 (12-24)	21J1976-16	Soil		SM 2540G SOP-466 PFAS	
Trip Blank	21J1976-17	Water		SOP-454 PFAS	
Field Blank	21J1976-18	Water		SOP-454 PFAS	
Equipment Blank	21J1976-19	Water		SOP-454 PFAS	
Rinsate	21J1976-20	Water		SOP-454 PFAS	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SOP-454 PFAS

Qualifications:

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

Perfluorodecanoic acid (PFDA)

B293895-BSD1

Extracted Internal Standard recovery is outside of control limits. Data is not significantly affected since associated analyte is not detected and bias is on the high side.

Analyte & Samples(s) Qualified:

M7PFUnA, MPFBA

21J1976-18[Field Blank], 21J1976-20[Rinsate]

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

8:2 Fluorotelomersulfonic acid (8:2FTS A)

S065193-CCV5

SOP-466 PFAS

Qualifications:

Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is within method specified criteria.

Analyte & Samples(s) Qualified:

Perfluorooctanesulfonic acid (PFOS)

21J1976-01[22MTN S-1 (6-12)], B294243-MS1

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Technical Representative

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-1 (6-12)

Sampled: 10/27/2021 08:00

Sample ID: 21J1976-01

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.21	0.52	0.070	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.52	0.080	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluoropentanoic acid (PFPeA)	0.13	0.52	0.080	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluorohexanoic acid (PFHxA)	0.27	0.52	0.098	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.52	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
9Cl-PF3ONS (F53B Major)	ND	0.52	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.52	0.17	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.52	0.25	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.52	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluorodecanoic acid (PFDA)	ND	0.52	0.068	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.52	0.080	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.52	0.086	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.52	0.16	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
N-EtFOSAA	ND	0.52	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
N-MeFOSAA	ND	0.52	0.096	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.52	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.52	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.52	0.097	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.52	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.52	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.52	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.52	0.16	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.52	0.17	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluorohexanesulfonic acid (PFHxS)	1.3	0.52	0.084	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.52	0.099	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.52	0.097	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.32	0.52	0.12	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.52	0.077	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.52	0.096	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.52	0.082	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluoroheptanoic acid (PFHpA)	0.13	0.52	0.076	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluorooctanoic acid (PFOA)	0.34	0.52	0.15	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluorooctanesulfonic acid (PFOS)	4.3	0.52	0.071	µg/kg dry	1	MS-22	SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH
Perfluorononanoic acid (PFNA)	0.11	0.52	0.086	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:33	BLH

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-1 (6-12)

Sampled: 10/27/2021 08:00

Sample ID: 21J1976-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	77.9		% Wt	1		SM 2540G	11/11/21	11/12/21 9:16	WT

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-1 (12-24)

Sampled: 10/27/2021 08:00

Sample ID: 21J1976-02

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.25	0.51	0.068	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.51	0.078	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluoropentanoic acid (PFPeA)	0.22	0.51	0.078	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluorohexanoic acid (PFHxA)	0.48	0.51	0.095	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.51	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
9Cl-PF3ONS (F53B Major)	ND	0.51	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.51	0.16	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.51	0.25	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.51	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluorodecanoic acid (PFDA)	ND	0.51	0.066	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.51	0.078	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.51	0.084	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.51	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
N-EtFOSAA	ND	0.51	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
N-MeFOSAA	ND	0.51	0.093	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.51	0.098	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.51	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.51	0.094	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.51	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.51	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.51	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.51	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.51	0.16	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluorohexanesulfonic acid (PFHxS)	2.8	0.51	0.082	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.51	0.096	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.51	0.094	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.72	0.51	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.51	0.075	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.51	0.093	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.51	0.079	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluoroheptanoic acid (PFHpA)	0.21	0.51	0.074	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluorooctanoic acid (PFOA)	0.45	0.51	0.15	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluorooctanesulfonic acid (PFOS)	4.0	0.51	0.069	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH
Perfluorononanoic acid (PFNA)	ND	0.51	0.084	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:40	BLH

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-1 (12-24)

Sampled: 10/27/2021 08:00

Sample ID: 21J1976-02

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	75.3		% Wt	1		SM 2540G	11/11/21	11/12/21 9:16	WT

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-3 (6-12)

Sampled: 10/27/2021 08:30

Sample ID: 21J1976-03

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.23	0.68	0.090	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluorobutanesulfonic acid (PFBS)	0.11	0.68	0.10	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluoropentanoic acid (PFPeA)	0.13	0.68	0.10	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluorohexanoic acid (PFHxA)	0.15	0.68	0.13	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.68	0.19	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
9Cl-PF3ONS (F53B Major)	ND	0.68	0.17	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.68	0.22	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.68	0.33	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.68	0.18	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluorodecanoic acid (PFDA)	ND	0.68	0.087	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.68	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.68	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.68	0.20	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
N-EtFOSAA	ND	0.68	0.19	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
N-MeFOSAA	ND	0.68	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.68	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.68	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.68	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.68	0.16	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.68	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.68	0.18	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.68	0.20	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.68	0.21	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluorohexanesulfonic acid (PFHxS)	0.33	0.68	0.11	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.68	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.68	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.28	0.68	0.15	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.68	0.099	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.68	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.68	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluoroheptanoic acid (PFHpA)	0.15	0.68	0.098	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluorooctanoic acid (PFOA)	0.71	0.68	0.19	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluorooctanesulfonic acid (PFOS)	0.71	0.68	0.092	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH
Perfluorononanoic acid (PFNA)	0.14	0.68	0.11	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:47	BLH

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-3 (6-12)

Sampled: 10/27/2021 08:30

Sample ID: 21J1976-03

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	60.5		% Wt	1		SM 2540G	11/11/21	11/12/21 9:16	WT

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-4 (6-12)

Sampled: 10/27/2021 08:50

Sample ID: 21J1976-04

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.18	0.57	0.076	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.57	0.087	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.57	0.087	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.57	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.57	0.16	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
9Cl-PF3ONS (F53B Major)	ND	0.57	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.57	0.18	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.57	0.27	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.57	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluorodecanoic acid (PFDA)	ND	0.57	0.073	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.57	0.087	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.57	0.093	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.57	0.17	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
N-EtFOSAA	ND	0.57	0.16	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
N-MeFOSAA	ND	0.57	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.57	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.57	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.57	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.57	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.57	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.57	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.57	0.17	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.57	0.18	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.57	0.091	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.57	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.57	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.57	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.57	0.083	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.57	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.57	0.088	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluoroheptanoic acid (PFHpA)	0.088	0.57	0.082	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluorooctanoic acid (PFOA)	0.36	0.57	0.16	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluorooctanesulfonic acid (PFOS)	0.54	0.57	0.077	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH
Perfluorononanoic acid (PFNA)	0.18	0.57	0.093	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 18:54	BLH

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-4 (6-12)

Sampled: 10/27/2021 08:50

Sample ID: 21J1976-04

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	68.6		% Wt	1		SM 2540G	11/11/21	11/12/21 9:16	WT

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-4 (12-18)

Sampled: 10/27/2021 08:50

Sample ID: 21J1976-05

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.55	0.073	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.55	0.084	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.55	0.084	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.55	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.55	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
9Cl-PF3ONS (F53B Major)	ND	0.55	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.55	0.18	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.55	0.26	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.55	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluorodecanoic acid (PFDA)	ND	0.55	0.071	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.55	0.084	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.55	0.090	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.55	0.16	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
N-EtFOSAA	ND	0.55	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
N-MeFOSAA	ND	0.55	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.55	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.55	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.55	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.55	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.55	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.55	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.55	0.17	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.55	0.17	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluorohexanesulfonic acid (PFHxS)	0.13	0.55	0.088	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.55	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.55	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.55	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.55	0.080	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.55	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.55	0.085	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.55	0.079	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluorooctanoic acid (PFOA)	0.17	0.55	0.16	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluorooctanesulfonic acid (PFOS)	0.33	0.55	0.074	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH
Perfluorononanoic acid (PFNA)	0.13	0.55	0.090	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:01	BLH

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-4 (12-18)

Sampled: 10/27/2021 08:50

Sample ID: 21J1976-05

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	68.7		% Wt	1		SM 2540G	11/11/21	11/12/21 9:16	WT

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-5 (6-12)

Sampled: 10/27/2021 09:00

Sample ID: 21J1976-06

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.39	0.052	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.39	0.060	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.39	0.060	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.39	0.073	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.39	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
9Cl-PF3ONS (F53B Major)	ND	0.39	0.098	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.39	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.39	0.19	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.39	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluorodecanoic acid (PFDA)	ND	0.39	0.050	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.39	0.060	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.39	0.064	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.39	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
N-EtFOSAA	ND	0.39	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
N-MeFOSAA	ND	0.39	0.071	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.39	0.075	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.39	0.088	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.39	0.072	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.39	0.091	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.39	0.076	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.39	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.39	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.39	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluorohexanesulfonic acid (PFHxS)	0.17	0.39	0.063	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.39	0.074	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.39	0.072	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.18	0.39	0.090	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.39	0.057	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.39	0.071	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.39	0.061	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.39	0.056	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluorooctanoic acid (PFOA)	ND	0.39	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluorooctanesulfonic acid (PFOS)	0.12	0.39	0.053	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH
Perfluorononanoic acid (PFNA)	ND	0.39	0.064	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:08	BLH

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-5 (6-12)

Sampled: 10/27/2021 09:00

Sample ID: 21J1976-06

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	96.0		% Wt	1		SM 2540G	11/11/21	11/12/21 9:17	WT

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-5 (12-18)

Sampled: 10/27/2021 09:00

Sample ID: 21J1976-07

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.40	0.054	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.40	0.062	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.40	0.062	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.40	0.076	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.40	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
9Cl-PF3ONS (F53B Major)	ND	0.40	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.40	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.40	0.20	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.40	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluorodecanoic acid (PFDA)	ND	0.40	0.052	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.40	0.062	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.40	0.067	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.40	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
N-EtFOSAA	ND	0.40	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
N-MeFOSAA	ND	0.40	0.074	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.40	0.077	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.40	0.091	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.40	0.075	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.40	0.094	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.40	0.079	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.40	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.40	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.40	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluorohexanesulfonic acid (PFHxS)	0.35	0.40	0.065	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.40	0.076	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.40	0.075	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.16	0.40	0.093	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.40	0.059	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.40	0.074	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.40	0.063	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.40	0.058	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluorooctanoic acid (PFOA)	ND	0.40	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	0.40	0.055	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH
Perfluorononanoic acid (PFNA)	ND	0.40	0.067	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:16	BLH

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-5 (12-18)

Sampled: 10/27/2021 09:00

Sample ID: 21J1976-07

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	93.6		% Wt	1		SM 2540G	11/11/21	11/12/21 9:17	WT

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-6 (6-12)

Sampled: 10/27/2021 09:30

Sample ID: 21J1976-08

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.44	0.059	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.44	0.068	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.44	0.068	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.44	0.083	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.44	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
9Cl-PF3ONS (F53B Major)	ND	0.44	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.44	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.44	0.21	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.44	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluorodecanoic acid (PFDA)	ND	0.44	0.057	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.44	0.068	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.44	0.073	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.44	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
N-EtFOSAA	ND	0.44	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
N-MeFOSAA	ND	0.44	0.081	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.44	0.084	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.44	0.099	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.44	0.082	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.44	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.44	0.086	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.44	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.44	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.44	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluorohexanesulfonic acid (PFHxS)	0.21	0.44	0.071	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.44	0.084	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.44	0.082	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.44	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.44	0.065	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.44	0.081	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.44	0.069	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluoroheptanoic acid (PFHpA)	0.066	0.44	0.064	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluorooctanoic acid (PFOA)	0.22	0.44	0.13	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluorooctanesulfonic acid (PFOS)	0.37	0.44	0.060	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH
Perfluorononanoic acid (PFNA)	ND	0.44	0.073	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:23	BLH

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-6 (6-12)

Sampled: 10/27/2021 09:30

Sample ID: 21J1976-08

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	89.2		% Wt	1		SM 2540G	11/11/21	11/12/21 9:17	WT

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-7 (6-12)

Sampled: 10/27/2021 10:00

Sample ID: 21J1976-09

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.58	0.077	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluorobutanesulfonic acid (PFBS)	0.25	0.58	0.088	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.58	0.088	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.58	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.58	0.16	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
9Cl-PF3ONS (F53B Major)	ND	0.58	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.58	0.18	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.58	0.28	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.58	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluorodecanoic acid (PFDA)	0.23	0.58	0.074	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.58	0.088	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.58	0.095	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.58	0.17	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
N-EtFOSAA	ND	0.58	0.16	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
N-MeFOSAA	ND	0.58	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.58	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.58	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.58	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.58	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.58	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.58	0.16	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.58	0.17	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.58	0.18	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluorohexanesulfonic acid (PFHxS)	0.33	0.58	0.092	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.58	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.58	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.58	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluoropentanesulfonic acid (PFPeS)	0.18	0.58	0.085	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluoroundecanoic acid (PFUnA)	0.19	0.58	0.11	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.58	0.090	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluoroheptanoic acid (PFHpA)	0.17	0.58	0.083	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluorooctanoic acid (PFOA)	0.57	0.58	0.16	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluorooctanesulfonic acid (PFOS)	2.1	0.58	0.078	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH
Perfluorononanoic acid (PFNA)	0.45	0.58	0.095	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:30	BLH

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-7 (6-12)

Sampled: 10/27/2021 10:00

Sample ID: 21J1976-09

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	68.9		% Wt	1		SM 2540G	11/11/21	11/12/21 9:17	WT

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-8 (6-12)

Sampled: 10/27/2021 10:30

Sample ID: 21J1976-10

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.51	0.068	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.51	0.079	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.51	0.079	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.51	0.096	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.51	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
9Cl-PF3ONS (F53B Major)	ND	0.51	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.51	0.16	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.51	0.25	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.51	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluorodecanoic acid (PFDA)	ND	0.51	0.066	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.51	0.079	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.51	0.084	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.51	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
N-EtFOSAA	ND	0.51	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
N-MeFOSAA	ND	0.51	0.094	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.51	0.098	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.51	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.51	0.095	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.51	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.51	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.51	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.51	0.16	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.51	0.16	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluorohexanesulfonic acid (PFHxS)	0.095	0.51	0.082	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.51	0.097	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.51	0.095	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.51	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.51	0.075	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.51	0.094	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.51	0.080	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.51	0.074	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluorooctanoic acid (PFOA)	0.25	0.51	0.15	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluorooctanesulfonic acid (PFOS)	0.26	0.51	0.070	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH
Perfluorononanoic acid (PFNA)	ND	0.51	0.084	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:37	BLH

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-8 (6-12)

Sampled: 10/27/2021 10:30

Sample ID: 21J1976-10

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	75.0		% Wt	1		SM 2540G	11/11/21	11/12/21 9:17	WT

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-8 (12-18)

Sampled: 10/27/2021 10:30

Sample ID: 21J1976-11

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	0.50	0.067	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.50	0.077	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.50	0.077	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.50	0.093	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.50	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
9Cl-PF3ONS (F53B Major)	ND	0.50	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.50	0.16	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.50	0.24	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.50	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluorodecanoic acid (PFDA)	ND	0.50	0.065	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.50	0.077	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.50	0.082	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.50	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
N-EtFOSAA	ND	0.50	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
N-MeFOSAA	ND	0.50	0.091	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.50	0.096	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.50	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.50	0.092	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.50	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.50	0.098	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.50	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.50	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.50	0.16	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.50	0.080	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.50	0.095	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.50	0.092	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.20	0.50	0.11	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.50	0.073	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.50	0.091	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.50	0.078	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluoroheptanoic acid (PFHpA)	ND	0.50	0.072	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluorooctanoic acid (PFOA)	ND	0.50	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	0.50	0.068	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH
Perfluorononanoic acid (PFNA)	ND	0.50	0.082	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:52	BLH

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-8 (12-18)

Sampled: 10/27/2021 10:30

Sample ID: 21J1976-11

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	75.0		% Wt	1		SM 2540G	11/11/21	11/12/21 9:18	WT

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-10 (0-6)

Sampled: 10/27/2021 11:00

Sample ID: 21J1976-12

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.62	0.68	0.090	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluorobutanesulfonic acid (PFBS)	0.12	0.68	0.10	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluoropentanoic acid (PFPeA)	0.30	0.68	0.10	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluorohexanoic acid (PFHxA)	0.29	0.68	0.13	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.68	0.19	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
9Cl-PF3ONS (F53B Major)	ND	0.68	0.17	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.68	0.22	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.68	0.33	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.68	0.18	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluorodecanoic acid (PFDA)	ND	0.68	0.087	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.68	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.68	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.68	0.20	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
N-EtFOSAA	ND	0.68	0.19	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
N-MeFOSAA	ND	0.68	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.68	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.68	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.68	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.68	0.16	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.68	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.68	0.18	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.68	0.20	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.68	0.21	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluorohexanesulfonic acid (PFHxS)	0.11	0.68	0.11	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.68	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.68	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.68	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.68	0.099	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.68	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.68	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluoroheptanoic acid (PFHpA)	0.29	0.68	0.098	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluorooctanoic acid (PFOA)	0.86	0.68	0.19	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluorooctanesulfonic acid (PFOS)	1.1	0.68	0.092	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH
Perfluorononanoic acid (PFNA)	0.20	0.68	0.11	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 19:59	BLH

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-10 (0-6)

Sampled: 10/27/2021 11:00

Sample ID: 21J1976-12

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	59.2		% Wt	1		SM 2540G	11/11/21	11/12/21 9:18	WT

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-11 (0-12)

Sampled: 10/27/2021 11:30

Sample ID: 21J1976-13

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.36	0.57	0.076	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.57	0.087	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluoropentanoic acid (PFPeA)	0.17	0.57	0.087	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluorohexanoic acid (PFHxA)	0.17	0.57	0.11	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.57	0.16	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
9Cl-PF3ONS (F53B Major)	ND	0.57	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.57	0.18	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.57	0.27	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.57	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluorodecanoic acid (PFDA)	0.11	0.57	0.073	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.57	0.087	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.57	0.093	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.57	0.17	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
N-EtFOSAA	ND	0.57	0.16	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
N-MeFOSAA	ND	0.57	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.57	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.57	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.57	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.57	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.57	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.57	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.57	0.17	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	0.57	0.18	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluorohexanesulfonic acid (PFHxS)	0.16	0.57	0.091	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.57	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.57	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.57	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.57	0.083	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.57	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.57	0.088	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluoroheptanoic acid (PFHpA)	0.25	0.57	0.082	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluorooctanoic acid (PFOA)	0.91	0.57	0.16	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluorooctanesulfonic acid (PFOS)	1.0	0.57	0.077	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH
Perfluorononanoic acid (PFNA)	0.25	0.57	0.093	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:06	BLH

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-11 (0-12)

Sampled: 10/27/2021 11:30

Sample ID: 21J1976-13

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	69.0		% Wt	1		SM 2540G	11/11/21	11/12/21 9:19	WT

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-12 (0-12)

Sampled: 10/27/2021 12:00

Sample ID: 21J1976-14

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	1.4	0.77	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.77	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluoropentanoic acid (PFPeA)	0.50	0.77	0.12	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluorohexanoic acid (PFHxA)	0.43	0.77	0.14	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.77	0.22	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
9Cl-PF3ONS (F53B Major)	ND	0.77	0.19	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.77	0.25	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.77	0.37	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.77	0.20	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluorodecanoic acid (PFDA)	0.25	0.77	0.099	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluorododecanoic acid (PFDoA)	0.13	0.77	0.12	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.77	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.77	0.23	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
N-EtFOSAA	ND	0.77	0.22	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
N-MeFOSAA	ND	0.77	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.77	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.77	0.17	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.77	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.77	0.18	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.77	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.77	0.21	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.77	0.23	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.77	0.24	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluorohexanesulfonic acid (PFHxS)	0.16	0.77	0.12	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.77	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.77	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.25	0.77	0.18	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.77	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluoroundecanoic acid (PFUnA)	0.22	0.77	0.14	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.77	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluoroheptanoic acid (PFHpA)	0.66	0.77	0.11	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluorooctanoic acid (PFOA)	1.4	0.77	0.22	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluorooctanesulfonic acid (PFOS)	1.7	0.77	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH
Perfluorononanoic acid (PFNA)	0.46	0.77	0.13	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:14	BLH

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-12 (0-12)

Sampled: 10/27/2021 12:00

Sample ID: 21J1976-14

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	51.8		% Wt	1		SM 2540G	11/11/21	11/12/21 9:19	WT

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-13 (0-12)

Sampled: 10/27/2021 12:30

Sample ID: 21J1976-15

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.082	0.53	0.071	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.53	0.082	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluoropentanoic acid (PFPeA)	0.086	0.53	0.082	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.53	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.53	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
9Cl-PF3ONS (F53B Major)	ND	0.53	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.53	0.17	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.53	0.26	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.53	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluorodecanoic acid (PFDA)	0.21	0.53	0.069	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluorododecanoic acid (PFDoA)	0.11	0.53	0.082	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.53	0.088	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.53	0.16	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
N-EtFOSAA	0.29	0.53	0.15	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
N-MeFOSAA	ND	0.53	0.097	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.53	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	0.53	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.53	0.098	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluorodecanesulfonic acid (PFDS)	0.13	0.53	0.12	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.53	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.53	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.53	0.16	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.53	0.17	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	0.53	0.085	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.53	0.10	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.53	0.098	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.45	0.53	0.12	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.53	0.078	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluoroundecanoic acid (PFUnA)	0.18	0.53	0.097	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.53	0.083	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluoroheptanoic acid (PFHpA)	0.13	0.53	0.077	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluorooctanoic acid (PFOA)	0.58	0.53	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluorooctanesulfonic acid (PFOS)	3.9	0.53	0.072	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH
Perfluorononanoic acid (PFNA)	0.15	0.53	0.088	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:21	BLH

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-13 (0-12)

Sampled: 10/27/2021 12:30

Sample ID: 21J1976-15

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	75.3		% Wt	1		SM 2540G	11/11/21	11/12/21 9:19	WT

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-13 (12-24)

Sampled: 10/27/2021 12:30

Sample ID: 21J1976-16

Sample Matrix: Soil

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.089	0.48	0.064	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	0.48	0.074	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluoropentanoic acid (PFPeA)	ND	0.48	0.074	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluorohexanoic acid (PFHxA)	ND	0.48	0.090	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
11Cl-PF3OUdS (F53B Minor)	ND	0.48	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
9Cl-PF3ONS (F53B Major)	ND	0.48	0.12	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.48	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.48	0.23	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.48	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluorodecanoic acid (PFDA)	ND	0.48	0.062	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluorododecanoic acid (PFDoA)	ND	0.48	0.074	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.48	0.079	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.48	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
N-EtFOSAA	ND	0.48	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
N-MeFOSAA	ND	0.48	0.088	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluorotetradecanoic acid (PFTA)	ND	0.48	0.092	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	0.48	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.48	0.089	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	0.48	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluorooctanesulfonamide (FOSA)	ND	0.48	0.094	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluorononanesulfonic acid (PFNS)	ND	0.48	0.13	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.48	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.48	0.15	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluorohexanesulfonic acid (PFHxS)	0.086	0.48	0.077	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.48	0.091	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.48	0.089	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.48	0.11	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	0.48	0.071	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluoroundecanoic acid (PFUnA)	ND	0.48	0.088	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.48	0.075	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluoroheptanoic acid (PFHpA)	0.10	0.48	0.070	µg/kg dry	1	J	SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluorooctanoic acid (PFOA)	0.64	0.48	0.14	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluorooctanesulfonic acid (PFOS)	0.53	0.48	0.065	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH
Perfluorononanoic acid (PFNA)	ND	0.48	0.079	µg/kg dry	1		SOP-466 PFAS	11/10/21	11/11/21 20:28	BLH

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: 22MTN S-13 (12-24)

Sampled: 10/27/2021 12:30

Sample ID: 21J1976-16

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	78.8		% Wt	1		SM 2540G	11/11/21	11/12/21 9:19	WT

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: Trip Blank

Sampled: 10/27/2021 00:00

Sample ID: 21J1976-17

Sample Matrix: Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	1.9	0.69	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluoropentanoic acid (PFPeA)	ND	1.9	0.37	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.60	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.57	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9	0.46	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.88	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
N-EtFOSAA	ND	1.9	0.59	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
N-MeFOSAA	ND	1.9	0.71	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.30	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.39	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	0.29	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	0.18	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.39	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	1.9	0.24	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9	0.64	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	0.56	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH
Perfluorononanoic acid (PFNA)	0.43	1.9	0.32	ng/L	1	J	SOP-454 PFAS	11/4/21	11/9/21 18:27	BLH

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: Field Blank

Sampled: 10/27/2021 08:00

Sample ID: 21J1976-18

Sample Matrix: Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	2.0	0.73	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluoropentanoic acid (PFPeA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluorohexanoic acid (PFHxA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
11Cl-PF3OUdS (F53B Minor)	ND	2.0	0.63	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
9Cl-PF3ONS (F53B Major)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	0.23	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	0.59	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluorodecanoic acid (PFDA)	ND	2.0	0.48	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.43	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.23	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	0.92	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
N-EtFOSAA	ND	2.0	0.62	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
N-MeFOSAA	ND	2.0	0.74	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	2.0	0.27	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.41	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.16	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.30	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluoro-1-butananesulfonamide (FBSA)	ND	2.0	0.19	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	0.33	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.41	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.33	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	2.0	0.25	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.27	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluoroheptanoic acid (PFHpA)	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluorooctanoic acid (PFOA)	ND	2.0	0.67	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	0.59	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH
Perfluorononanoic acid (PFNA)	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:48	BLH

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: Equipment Blank

Sampled: 10/27/2021 12:00

Sample ID: 21J1976-19

Sample Matrix: Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	1.9	0.71	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluoropentanoic acid (PFPeA)	ND	1.9	0.38	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9	0.37	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.62	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9	0.37	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	0.23	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.58	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9	0.47	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.42	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.90	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
N-EtFOSAA	ND	1.9	0.60	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
N-MeFOSAA	ND	1.9	0.73	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.31	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.40	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	0.30	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	0.18	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.40	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	1.9	0.25	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9	0.65	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	0.58	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH
Perfluorononanoic acid (PFNA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 18:56	BLH

Project Location: 22 Mountain, Princeton, MA

Sample Description:

Work Order: 21J1976

Date Received: 10/29/2021

Field Sample #: Rinsate

Sampled: 10/27/2021 08:00

Sample ID: 21J1976-20

Sample Matrix: Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	1.9	0.73	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluoropentanoic acid (PFPeA)	ND	1.9	0.38	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluorohexanoic acid (PFHxA)	0.75	1.9	0.38	ng/L	1	J	SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.63	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9	0.38	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	0.23	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.59	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9	0.48	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.43	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	0.23	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.92	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
N-EtFOSAA	ND	1.9	0.61	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
N-MeFOSAA	ND	1.9	0.74	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	0.30	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	0.19	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	1.9	0.25	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9	0.66	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	0.59	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH
Perfluorononanoic acid (PFNA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	11/4/21	11/9/21 19:03	BLH

Sample Extraction Data

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
21J1976-01 [22MTN S-1 (6-12)]	B294465	11/11/21
21J1976-02 [22MTN S-1 (12-24)]	B294465	11/11/21
21J1976-03 [22MTN S-3 (6-12)]	B294465	11/11/21
21J1976-04 [22MTN S-4 (6-12)]	B294465	11/11/21
21J1976-05 [22MTN S-4 (12-18)]	B294465	11/11/21
21J1976-06 [22MTN S-5 (6-12)]	B294465	11/11/21
21J1976-07 [22MTN S-5 (12-18)]	B294465	11/11/21
21J1976-08 [22MTN S-6 (6-12)]	B294465	11/11/21
21J1976-09 [22MTN S-7 (6-12)]	B294465	11/11/21
21J1976-10 [22MTN S-8 (6-12)]	B294465	11/11/21
21J1976-11 [22MTN S-8 (12-18)]	B294465	11/11/21
21J1976-12 [22MTN S-10 (0-6)]	B294465	11/11/21
21J1976-13 [22MTN S-11 (0-12)]	B294465	11/11/21
21J1976-14 [22MTN S-12 (0-12)]	B294465	11/11/21
21J1976-15 [22MTN S-13 (0-12)]	B294465	11/11/21
21J1976-16 [22MTN S-13 (12-24)]	B294465	11/11/21

Prep Method: SOP 454-PFAAS-SOP-454 PFAS

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1976-17 [Trip Blank]	B293895	268	1.00	11/04/21
21J1976-18 [Field Blank]	B293895	256	1.00	11/04/21
21J1976-19 [Equipment Blank]	B293895	261	1.00	11/04/21
21J1976-20 [Rinsate]	B293895	257	1.00	11/04/21

Prep Method: SOP 465-PFAAS-SOP-466 PFAS

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21J1976-01 [22MTN S-1 (6-12)]	B294243	5.51	5.00	11/10/21
21J1976-02 [22MTN S-1 (12-24)]	B294243	5.85	5.00	11/10/21
21J1976-03 [22MTN S-3 (6-12)]	B294243	5.51	5.00	11/10/21
21J1976-04 [22MTN S-4 (6-12)]	B294243	5.79	5.00	11/10/21
21J1976-05 [22MTN S-4 (12-18)]	B294243	5.97	5.00	11/10/21
21J1976-06 [22MTN S-5 (6-12)]	B294243	5.99	5.00	11/10/21
21J1976-07 [22MTN S-5 (12-18)]	B294243	5.94	5.00	11/10/21
21J1976-08 [22MTN S-6 (6-12)]	B294243	5.71	5.00	11/10/21
21J1976-09 [22MTN S-7 (6-12)]	B294243	5.66	5.00	11/10/21
21J1976-10 [22MTN S-8 (6-12)]	B294243	5.84	5.00	11/10/21
21J1976-11 [22MTN S-8 (12-18)]	B294243	5.99	5.00	11/10/21
21J1976-12 [22MTN S-10 (0-6)]	B294243	5.61	5.00	11/10/21
21J1976-13 [22MTN S-11 (0-12)]	B294243	5.74	5.00	11/10/21
21J1976-14 [22MTN S-12 (0-12)]	B294243	5.65	5.00	11/10/21
21J1976-15 [22MTN S-13 (0-12)]	B294243	5.60	5.00	11/10/21
21J1976-16 [22MTN S-13 (12-24)]	B294243	5.91	5.00	11/10/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B293895 - SOP 454-PFAAS

Blank (B293895-BLK1)

Prepared: 11/04/21 Analyzed: 11/08/21

Perfluorobutanoic acid (PFBA)	ND	1.9	ng/L
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L
Perfluoropentanoic acid (PFPeA)	ND	1.9	ng/L
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	ng/L
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	1.9	ng/L
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	ng/L
N-EtFOSAA	ND	1.9	ng/L
N-MeFOSAA	ND	1.9	ng/L
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	ng/L
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	ng/L
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	ng/L
Perfluorooctanesulfonamide (FOSA)	ND	1.9	ng/L
Perfluorononanesulfonic acid (PFNS)	ND	1.9	ng/L
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	ng/L
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	ng/L
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	ng/L
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	ng/L
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	ng/L
Perfluoropentanesulfonic acid (PFPeS)	ND	1.9	ng/L
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	ng/L
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L

LCS (B293895-BS1)

Prepared: 11/04/21 Analyzed: 11/08/21

Perfluorobutanoic acid (PFBA)	7.39	1.9	ng/L	9.74	75.8	73-129
Perfluorobutanesulfonic acid (PFBS)	6.89	1.9	ng/L	8.62	79.9	72-130
Perfluoropentanoic acid (PFPeA)	7.12	1.9	ng/L	9.74	73.0	72-129
Perfluorohexanoic acid (PFHxA)	7.15	1.9	ng/L	9.74	73.4	72-129
11Cl-PF3OUdS (F53B Minor)	6.59	1.9	ng/L	9.18	71.8	50-150
9Cl-PF3ONS (F53B Major)	7.38	1.9	ng/L	9.08	81.3	50-150
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	6.93	1.9	ng/L	9.18	75.5	50-150
Hexafluoropropylene oxide dimer acid (HFPO-DA)	7.74	1.9	ng/L	9.74	79.4	50-150
8:2 Fluorotelomersulfonic acid (8:2FTS A)	7.71	1.9	ng/L	9.35	82.4	67-138
Perfluorodecanoic acid (PFDA)	7.07	1.9	ng/L	9.74	72.6	71-129
Perfluorododecanoic acid (PFDoA)	7.73	1.9	ng/L	9.74	79.4	72-134
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	7.09	1.9	ng/L	8.67	81.8	50-150

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B293895 - SOP 454-PFAAS

LCS (B293895-BS1)

Prepared: 11/04/21 Analyzed: 11/08/21

Perfluoroheptanesulfonic acid (PFHpS)	7.94	1.9	ng/L	9.31		85.3	69-134			
N-EtFOSAA	9.42	1.9	ng/L	9.74		96.6	61-135			
N-MeFOSAA	9.03	1.9	ng/L	9.74		92.7	65-136			
Perfluorotetradecanoic acid (PFTA)	7.63	1.9	ng/L	9.74		78.3	71-132			
Perfluorotridecanoic acid (PFTTrDA)	9.07	1.9	ng/L	9.74		93.0	65-144			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	7.84	1.9	ng/L	9.11		86.0	63-143			
Perfluorodecanesulfonic acid (PFDS)	7.63	1.9	ng/L	9.40		81.2	53-142			
Perfluorooctanesulfonamide (FOSA)	7.38	1.9	ng/L	9.74		75.8	67-137			
Perfluorononanesulfonic acid (PFNS)	7.40	1.9	ng/L	9.35		79.1	69-127			
Perfluoro-1-hexanesulfonamide (FHxSA)	7.97	1.9	ng/L	9.74		81.8	50-150			
Perfluoro-1-butanefulfonamide (FBSA)	7.39	1.9	ng/L	9.74		75.8	50-150			
Perfluorohexanesulfonic acid (PFHxS)	6.84	1.9	ng/L	8.87		77.2	68-131			
Perfluoro-4-oxapentanoic acid (PFMPA)	8.79	1.9	ng/L	9.74		90.2	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	7.96	1.9	ng/L	9.74		81.7	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	8.00	1.9	ng/L	9.26		86.5	64-140			
Perfluoropentanesulfonic acid (PFPeS)	6.92	1.9	ng/L	9.16		75.6	71-127			
Perfluoroundecanoic acid (PFUnA)	7.28	1.9	ng/L	9.74		74.7	69-133			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	8.25	1.9	ng/L	9.74		84.7	50-150			
Perfluoroheptanoic acid (PFHpA)	7.66	1.9	ng/L	9.74		78.6	72-130			
Perfluorooctanoic acid (PFOA)	7.91	1.9	ng/L	9.74		81.2	71-133			
Perfluorooctanesulfonic acid (PFOS)	7.56	1.9	ng/L	9.01		83.9	65-140			
Perfluorononanoic acid (PFNA)	7.55	1.9	ng/L	9.74		77.4	69-130			

LCS Dup (B293895-BSD1)

Prepared: 11/04/21 Analyzed: 11/08/21

Perfluorobutanoic acid (PFBA)	7.44	1.9	ng/L	9.74		76.4	73-129	0.680	30	
Perfluorobutanesulfonic acid (PFBS)	6.99	1.9	ng/L	8.62		81.1	72-130	1.32	30	
Perfluoropentanoic acid (PFPeA)	7.19	1.9	ng/L	9.74		73.9	72-129	1.08	30	
Perfluorohexanoic acid (PFHxA)	7.07	1.9	ng/L	9.74		72.6	72-129	1.12	30	
11Cl-PF3OUdS (F53B Minor)	6.98	1.9	ng/L	9.17		76.1	50-150	5.69	30	
9Cl-PF3ONS (F53B Major)	7.55	1.9	ng/L	9.08		83.2	50-150	2.25	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	7.22	1.9	ng/L	9.17		78.7	50-150	4.05	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	7.64	1.9	ng/L	9.74		78.5	50-150	1.23	30	
8:2 Fluorotelomersulfonic acid (8:2FTS A)	8.11	1.9	ng/L	9.35		86.7	67-138	5.10	30	
Perfluorodecanoic acid (PFDA)	6.81	1.9	ng/L	9.74		69.9	* 71-129	3.81	30	L-07
Perfluorododecanoic acid (PFDoA)	7.64	1.9	ng/L	9.74		78.5	72-134	1.18	30	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	7.34	1.9	ng/L	8.67		84.7	50-150	3.47	30	
Perfluoroheptanesulfonic acid (PFHpS)	7.39	1.9	ng/L	9.30		79.4	69-134	7.18	30	
N-EtFOSAA	8.81	1.9	ng/L	9.74		90.5	61-135	6.62	30	
N-MeFOSAA	8.65	1.9	ng/L	9.74		88.8	65-136	4.29	30	
Perfluorotetradecanoic acid (PFTA)	7.78	1.9	ng/L	9.74		79.9	71-132	1.92	30	
Perfluorotridecanoic acid (PFTTrDA)	8.61	1.9	ng/L	9.74		88.4	65-144	5.15	30	
4:2 Fluorotelomersulfonic acid (4:2FTS A)	7.79	1.9	ng/L	9.10		85.5	63-143	0.645	30	
Perfluorodecanesulfonic acid (PFDS)	8.07	1.9	ng/L	9.40		85.9	53-142	5.63	30	
Perfluorooctanesulfonamide (FOSA)	7.59	1.9	ng/L	9.74		77.9	67-137	2.74	30	
Perfluorononanesulfonic acid (PFNS)	7.77	1.9	ng/L	9.35		83.2	69-127	4.96	30	
Perfluoro-1-hexanesulfonamide (FHxSA)	8.24	1.9	ng/L	9.74		84.6	50-150	3.32	30	
Perfluoro-1-butanefulfonamide (FBSA)	7.16	1.9	ng/L	9.74		73.5	50-150	3.12	30	
Perfluorohexanesulfonic acid (PFHxS)	7.34	1.9	ng/L	8.86		82.9	68-131	7.07	30	
Perfluoro-4-oxapentanoic acid (PFMPA)	8.64	1.9	ng/L	9.74		88.7	50-150	1.73	30	
Perfluoro-5-oxahexanoic acid (PFMBA)	8.00	1.9	ng/L	9.74		82.2	50-150	0.543	30	

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B293895 - SOP 454-PFAAS

LCS Dup (B293895-BS1)

Prepared: 11/04/21 Analyzed: 11/08/21

6:2 Fluorotelomersulfonic acid (6:2FTS A)	7.72	1.9	ng/L	9.25		83.5	64-140	3.58	30	
Perfluoropentanesulfonic acid (PFPeS)	7.22	1.9	ng/L	9.15		78.9	71-127	4.27	30	
Perfluoroundecanoic acid (PFUnA)	7.79	1.9	ng/L	9.74		80.0	69-133	6.73	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	8.19	1.9	ng/L	9.74		84.1	50-150	0.763	30	
Perfluoroheptanoic acid (PFHpA)	7.89	1.9	ng/L	9.74		81.0	72-130	3.02	30	
Perfluorooctanoic acid (PFOA)	8.16	1.9	ng/L	9.74		83.8	71-133	3.10	30	
Perfluorooctanesulfonic acid (PFOS)	7.49	1.9	ng/L	9.01		83.2	65-140	0.910	30	
Perfluorononanoic acid (PFNA)	7.39	1.9	ng/L	9.74		75.9	69-130	2.03	30	

Batch B294243 - SOP 465-PFAAS

Blank (B294243-BLK1)

Prepared: 11/10/21 Analyzed: 11/11/21

Perfluorobutanoic acid (PFBA)	ND	0.40	µg/kg wet							
Perfluorobutanesulfonic acid (PFBS)	ND	0.40	µg/kg wet							
Perfluoropentanoic acid (PFPeA)	ND	0.40	µg/kg wet							
Perfluorohexanoic acid (PFHxA)	ND	0.40	µg/kg wet							
11Cl-PF3OUdS (F53B Minor)	ND	0.40	µg/kg wet							
9Cl-PF3ONS (F53B Major)	ND	0.40	µg/kg wet							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.40	µg/kg wet							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.40	µg/kg wet							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.40	µg/kg wet							
Perfluorodecanoic acid (PFDA)	ND	0.40	µg/kg wet							
Perfluorododecanoic acid (PFDoA)	ND	0.40	µg/kg wet							
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.40	µg/kg wet							
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.40	µg/kg wet							
N-EtFOSAA	ND	0.40	µg/kg wet							
N-MeFOSAA	ND	0.40	µg/kg wet							
Perfluorotetradecanoic acid (PFTA)	ND	0.40	µg/kg wet							
Perfluorotridecanoic acid (PFTrDA)	ND	0.40	µg/kg wet							
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.40	µg/kg wet							
Perfluorodecanesulfonic acid (PFDS)	ND	0.40	µg/kg wet							
Perfluorooctanesulfonamide (FOSA)	ND	0.40	µg/kg wet							
Perfluoronanesulfonic acid (PFNS)	ND	0.40	µg/kg wet							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.40	µg/kg wet							
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.40	µg/kg wet							
Perfluorohexanesulfonic acid (PFHxS)	ND	0.40	µg/kg wet							
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.40	µg/kg wet							
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.40	µg/kg wet							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.40	µg/kg wet							
Perfluoropentanesulfonic acid (PFPeS)	ND	0.40	µg/kg wet							
Perfluoroundecanoic acid (PFUnA)	ND	0.40	µg/kg wet							
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.40	µg/kg wet							
Perfluoroheptanoic acid (PFHpA)	ND	0.40	µg/kg wet							
Perfluorooctanoic acid (PFOA)	ND	0.40	µg/kg wet							
Perfluorooctanesulfonic acid (PFOS)	ND	0.40	µg/kg wet							
Perfluorononanoic acid (PFNA)	ND	0.40	µg/kg wet							

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B294243 - SOP 465-PFAAS

LCS (B294243-BS1)

Prepared: 11/10/21 Analyzed: 11/11/21

Perfluorobutanoic acid (PFBA)	1.95	0.38	µg/kg wet	2.12		92.0	71-135			
Perfluorobutanesulfonic acid (PFBS)	1.81	0.38	µg/kg wet	1.88		96.6	72-128			
Perfluoropentanoic acid (PFPeA)	1.93	0.38	µg/kg wet	2.12		90.7	69-132			
Perfluorohexanoic acid (PFHxA)	1.87	0.38	µg/kg wet	2.12		87.9	70-132			
11Cl-PF3OUdS (F53B Minor)	2.14	0.38	µg/kg wet	2.00		107	50-150			
9Cl-PF3ONS (F53B Major)	2.11	0.38	µg/kg wet	1.98		106	50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	1.83	0.38	µg/kg wet	2.00		91.4	50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	1.97	0.38	µg/kg wet	2.12		92.8	50-150			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	1.92	0.38	µg/kg wet	2.04		94.0	65-137			
Perfluorodecanoic acid (PFDA)	1.89	0.38	µg/kg wet	2.12		89.1	69-133			
Perfluorododecanoic acid (PFDoA)	1.86	0.38	µg/kg wet	2.12		87.4	69-135			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	1.93	0.38	µg/kg wet	1.89		102	50-150			
Perfluoroheptanesulfonic acid (PFHpS)	2.22	0.38	µg/kg wet	2.03		109	70-132			
N-EtFOSAA	1.95	0.38	µg/kg wet	2.12		91.9	61-139			
N-MeFOSAA	1.81	0.38	µg/kg wet	2.12		85.1	63-144			
Perfluorotetradecanoic acid (PFTA)	2.01	0.38	µg/kg wet	2.12		94.6	69-133			
Perfluorotridecanoic acid (PFTrDA)	1.89	0.38	µg/kg wet	2.12		89.2	66-139			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.02	0.38	µg/kg wet	1.99		101	62-145			
Perfluorodecanesulfonic acid (PFDS)	1.89	0.38	µg/kg wet	2.05		92.5	59-134			
Perfluorooctanesulfonamide (FOSA)	1.82	0.38	µg/kg wet	2.12		85.9	67-137			
Perfluorononanesulfonic acid (PFNS)	2.49	0.38	µg/kg wet	2.04		122	69-125			
Perfluoro-1-hexanesulfonamide (FHxSA)	2.13	0.38	µg/kg wet	2.12		100	50-150			
Perfluoro-1-butanesulfonamide (FBSA)	1.92	0.38	µg/kg wet	2.12		90.5	50-150			
Perfluorohexanesulfonic acid (PFHxS)	1.88	0.38	µg/kg wet	1.93		97.1	67-130			
Perfluoro-4-oxapentanoic acid (PFMPA)	2.14	0.38	µg/kg wet	2.12		101	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	2.14	0.38	µg/kg wet	2.12		101	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.06	0.38	µg/kg wet	2.02		102	64-140			
Perfluoropentanesulfonic acid (PFPeS)	1.89	0.38	µg/kg wet	2.00		94.5	73-123			
Perfluoroundecanoic acid (PFUnA)	1.91	0.38	µg/kg wet	2.12		90.2	64-136			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.15	0.38	µg/kg wet	2.12		101	50-150			
Perfluoroheptanoic acid (PFHpA)	2.11	0.38	µg/kg wet	2.12		99.4	71-131			
Perfluorooctanoic acid (PFOA)	2.20	0.38	µg/kg wet	2.12		103	69-133			
Perfluorooctanesulfonic acid (PFOS)	1.98	0.38	µg/kg wet	1.96		101	68-136			
Perfluorononanoic acid (PFNA)	2.00	0.38	µg/kg wet	2.12		94.1	72-129			

Matrix Spike (B294243-MS1)

Source: 21J1976-01

Prepared: 11/10/21 Analyzed: 11/11/21

Perfluorobutanoic acid (PFBA)	2.97	0.50	µg/kg dry	2.77	0.215	99.6	71-135			
Perfluorobutanesulfonic acid (PFBS)	2.69	0.50	µg/kg dry	2.45	ND	110	72-128			
Perfluoropentanoic acid (PFPeA)	2.85	0.50	µg/kg dry	2.77	0.133	98.0	69-132			
Perfluorohexanoic acid (PFHxA)	3.00	0.50	µg/kg dry	2.77	0.270	98.5	70-132			
11Cl-PF3OUdS (F53B Minor)	2.92	0.50	µg/kg dry	2.61	ND	112	50-150			
9Cl-PF3ONS (F53B Major)	2.89	0.50	µg/kg dry	2.58	ND	112	50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	2.76	0.50	µg/kg dry	2.61	ND	106	50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	3.14	0.50	µg/kg dry	2.77	ND	113	50-150			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	3.11	0.50	µg/kg dry	2.66	ND	117	65-137			
Perfluorodecanoic acid (PFDA)	2.64	0.50	µg/kg dry	2.77	ND	95.4	69-133			
Perfluorododecanoic acid (PFDoA)	2.87	0.50	µg/kg dry	2.77	ND	104	69-135			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	2.82	0.50	µg/kg dry	2.46	ND	114	50-150			

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B294243 - SOP 465-PFAAS

Matrix Spike (B294243-MS1)	Source: 21J1976-01			Prepared: 11/10/21 Analyzed: 11/11/21					
Perfluoroheptanesulfonic acid (PFHpS)	3.12	0.50	µg/kg dry	2.65	ND 118	70-132			
N-EtFOSAA	3.37	0.50	µg/kg dry	2.77	ND 122	61-139			
N-MeFOSAA	3.27	0.50	µg/kg dry	2.77	ND 118	63-144			
Perfluorotetradecanoic acid (PFTA)	2.57	0.50	µg/kg dry	2.77	ND 92.9	69-133			
Perfluorotridecanoic acid (PFTTrDA)	2.71	0.50	µg/kg dry	2.77	ND 98.0	66-139			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.90	0.50	µg/kg dry	2.59	ND 112	62-145			
Perfluorodecanesulfonic acid (PFDS)	2.93	0.50	µg/kg dry	2.67	ND 110	59-134			
Perfluorooctanesulfonamide (FOSA)	2.70	0.50	µg/kg dry	2.77	ND 97.5	67-137			
Perfluorononanesulfonic acid (PFNS)	2.92	0.50	µg/kg dry	2.66	ND 110	69-125			
Perfluoro-1-hexanesulfonamide (FHxSA)	3.24	0.50	µg/kg dry	2.77	ND 117	50-150			
Perfluoro-1-butanesulfonamide (FBSA)	3.00	0.50	µg/kg dry	2.77	ND 108	50-150			
Perfluorohexanesulfonic acid (PFHxS)	3.47	0.50	µg/kg dry	2.52	1.25 88.1	67-130			
Perfluoro-4-oxapentanoic acid (PFMPA)	3.25	0.50	µg/kg dry	2.77	ND 117	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	3.01	0.50	µg/kg dry	2.77	ND 109	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	3.32	0.50	µg/kg dry	2.63	0.317 114	64-140			
Perfluoropetanesulfonic acid (PFPeS)	2.60	0.50	µg/kg dry	2.60	ND 100	73-123			
Perfluoroundecanoic acid (PFUnA)	2.87	0.50	µg/kg dry	2.77	ND 104	64-136			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	3.27	0.50	µg/kg dry	2.77	ND 118	50-150			
Perfluoroheptanoic acid (PFHpA)	3.13	0.50	µg/kg dry	2.77	0.126 108	71-131			
Perfluorooctanoic acid (PFOA)	3.21	0.50	µg/kg dry	2.77	0.342 103	69-133			
Perfluorooctanesulfonic acid (PFOS)	8.07	0.50	µg/kg dry	2.56	4.32 147 *	68-136			MS-22
Perfluorononanoic acid (PFNA)	2.95	0.50	µg/kg dry	2.77	0.105 103	72-129			

Matrix Spike Dup (B294243-MSD1)	Source: 21J1976-01			Prepared: 11/10/21 Analyzed: 11/11/21					
Perfluorobutanoic acid (PFBA)	2.93	0.49	µg/kg dry	2.73	0.215 99.4	71-135	1.48	30	
Perfluorobutanesulfonic acid (PFBS)	2.55	0.49	µg/kg dry	2.42	ND 106	72-128	5.37	30	
Perfluoropentanoic acid (PFPeA)	2.78	0.49	µg/kg dry	2.73	0.133 96.7	69-132	2.46	30	
Perfluorohexanoic acid (PFHxA)	2.81	0.49	µg/kg dry	2.73	0.270 92.8	70-132	6.63	30	
11Cl-PF3OUdS (F53B Minor)	2.84	0.49	µg/kg dry	2.57	ND 111	50-150	2.52	30	
9Cl-PF3ONS (F53B Major)	2.81	0.49	µg/kg dry	2.55	ND 110	50-150	2.93	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	2.58	0.49	µg/kg dry	2.57	ND 100	50-150	6.49	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	3.29	0.49	µg/kg dry	2.73	ND 121	50-150	4.77	30	
8:2 Fluorotelomersulfonic acid (8:2FTS A)	3.23	0.49	µg/kg dry	2.62	ND 123	65-137	3.54	30	
Perfluorodecanoic acid (PFDA)	2.76	0.49	µg/kg dry	2.73	ND 101	69-133	4.27	30	
Perfluorododecanoic acid (PFDoA)	2.63	0.49	µg/kg dry	2.73	ND 96.4	69-135	8.52	30	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	2.70	0.49	µg/kg dry	2.43	ND 111	50-150	4.15	30	
Perfluoroheptanesulfonic acid (PFHpS)	2.89	0.49	µg/kg dry	2.61	ND 111	70-132	7.64	30	
N-EtFOSAA	3.43	0.49	µg/kg dry	2.73	ND 126	61-139	1.61	30	
N-MeFOSAA	3.27	0.49	µg/kg dry	2.73	ND 120	63-144	0.100	30	
Perfluorotetradecanoic acid (PFTA)	2.71	0.49	µg/kg dry	2.73	ND 99.4	69-133	5.45	30	
Perfluorotridecanoic acid (PFTTrDA)	2.85	0.49	µg/kg dry	2.73	ND 104	66-139	4.89	30	
4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.79	0.49	µg/kg dry	2.56	ND 109	62-145	3.91	30	
Perfluorodecanesulfonic acid (PFDS)	2.91	0.49	µg/kg dry	2.63	ND 110	59-134	0.670	30	
Perfluorooctanesulfonamide (FOSA)	2.62	0.49	µg/kg dry	2.73	ND 96.0	67-137	2.89	30	
Perfluorononanesulfonic acid (PFNS)	2.78	0.49	µg/kg dry	2.62	ND 106	69-125	4.67	30	
Perfluoro-1-hexanesulfonamide (FHxSA)	3.16	0.49	µg/kg dry	2.73	ND 116	50-150	2.50	30	
Perfluoro-1-butanesulfonamide (FBSA)	2.90	0.49	µg/kg dry	2.73	ND 106	50-150	3.34	30	
Perfluorohexanesulfonic acid (PFHxS)	3.63	0.49	µg/kg dry	2.49	1.25 95.8	67-130	4.57	30	
Perfluoro-4-oxapentanoic acid (PFMPA)	3.22	0.49	µg/kg dry	2.73	ND 118	50-150	1.10	30	
Perfluoro-5-oxahexanoic acid (PFMBA)	2.93	0.49	µg/kg dry	2.73	ND 107	50-150	2.62	30	

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B294243 - SOP 465-PFAAS

Matrix Spike Dup (B294243-MSD1)

Source: 21J1976-01

Prepared: 11/10/21 Analyzed: 11/11/21

6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.88	0.49	µg/kg dry	2.60	0.317	98.9	64-140	14.0	30	
Perfluoropetanesulfonic acid (PFPeS)	2.60	0.49	µg/kg dry	2.57	ND	101	73-123	0.190	30	
Perfluoroundecanoic acid (PFUnA)	2.69	0.49	µg/kg dry	2.73	ND	98.3	64-136	6.61	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	3.16	0.49	µg/kg dry	2.73	ND	116	50-150	3.32	30	
Perfluoroheptanoic acid (PFHpA)	2.95	0.49	µg/kg dry	2.73	0.126	103	71-131	5.81	30	
Perfluorooctanoic acid (PFOA)	2.99	0.49	µg/kg dry	2.73	0.342	97.0	69-133	6.91	30	
Perfluorooctanesulfonic acid (PFOS)	7.56	0.49	µg/kg dry	2.52	4.32	128	68-136	6.50	30	
Perfluorononanoic acid (PFNA)	2.71	0.49	µg/kg dry	2.73	0.105	95.2	72-129	8.47	30	

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
L-07	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
MS-22	Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is within method specified criteria.
PF-17	Extracted Internal Standard recovery is outside of control limits. Data is not significantly affected since associated analyte is not detected and bias is on the high side.
V-20	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

ANALYST

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STATION PDF Management Station
JFC James F. Constantino
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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
22MTN S-1 (6-12) (21J1976-01)			Lab File ID: 21J1976-01.d			Analyzed: 11/11/21 18:33			
M8FOSA	422061.8	4.044517	451,140.00	4.044517	94	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	172273.5	2.58715	207,338.00	2.58715	83	50 - 150	0.0000	+/-0.50	
M2PFTA	1786281	4.370283	1,799,881.00	4.378417	99	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	204505.1	3.850917	225,194.00	3.850917	91	50 - 150	0.0000	+/-0.50	
MPFBA	723574.4	1.108317	819,390.00	1.108317	88	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	218762.9	2.91295	298,883.00	2.91295	73	50 - 150	0.0000	+/-0.50	
M6PFDA	1136380	3.851417	1,173,486.00	3.851417	97	50 - 150	0.0000	+/-0.50	
M3PFBS	170245.2	1.969733	190,139.00	1.969733	90	50 - 150	0.0000	+/-0.50	
M7PFUnA	1503090	3.993983	1,524,213.00	3.993983	99	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	116942	3.493333	131,267.00	3.493333	89	50 - 150	0.0000	+/-0.50	
M5PFPeA	724136.6	1.791367	823,921.00	1.791367	88	50 - 150	0.0000	+/-0.50	
M5PFHxA	994378.3	2.672333	1,131,820.00	2.672333	88	50 - 150	0.0000	+/-0.50	
M3PFHxS	129440.3	3.266833	141,124.00	3.266833	92	50 - 150	0.0000	+/-0.50	
M4PFHpA	1044384	3.2357	1,179,935.00	3.2357	89	50 - 150	0.0000	+/-0.50	
M8PFOA	1045362	3.50185	1,119,574.00	3.50185	93	50 - 150	0.0000	+/-0.50	
M8PFOS	150058.4	3.692083	163,358.00	3.692083	92	50 - 150	0.0000	+/-0.50	
M9PFNA	916042.4	3.693117	1,027,621.00	3.693117	89	50 - 150	0.0000	+/-0.50	
MPFDoA	1505574	4.128783	1,594,256.00	4.136817	94	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	254428	4.001467	294,893.00	4.001467	86	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	302538	3.921883	301,628.00	3.921883	100	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
22MTN S-1 (12-24) (21J1976-02)			Lab File ID: 21J1976-02.d			Analyzed: 11/11/21 18:40			
M8FOSA	421245.6	4.036517	451,140.00	4.044517	93	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	170584.3	2.57895	207,338.00	2.58715	82	50 - 150	-0.0082	+/-0.50	
M2PFTA	1783452	4.370283	1,799,881.00	4.378417	99	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	178390.1	3.850917	225,194.00	3.850917	79	50 - 150	0.0000	+/-0.50	
MPFBA	734417.8	1.108317	819,390.00	1.108317	90	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	214413.4	2.904767	298,883.00	2.91295	72	50 - 150	-0.0082	+/-0.50	
M6PFDA	1082784	3.84345	1,173,486.00	3.851417	92	50 - 150	-0.0080	+/-0.50	
M3PFBS	168274.7	1.969733	190,139.00	1.969733	89	50 - 150	0.0000	+/-0.50	
M7PFUnA	1462859	3.993983	1,524,213.00	3.993983	96	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	108791.1	3.493333	131,267.00	3.493333	83	50 - 150	0.0000	+/-0.50	
M5PFPeA	727173	1.7826	823,921.00	1.791367	88	50 - 150	-0.0088	+/-0.50	
M5PFHxA	996969.1	2.672333	1,131,820.00	2.672333	88	50 - 150	0.0000	+/-0.50	
M3PFHxS	121489.4	3.266817	141,124.00	3.266833	86	50 - 150	0.0000	+/-0.50	
M4PFHpA	1070864	3.227617	1,179,935.00	3.2357	91	50 - 150	-0.0081	+/-0.50	
M8PFOA	1034314	3.50185	1,119,574.00	3.50185	92	50 - 150	0.0000	+/-0.50	
M8PFOS	142055	3.692083	163,358.00	3.692083	87	50 - 150	0.0000	+/-0.50	
M9PFNA	925263	3.693117	1,027,621.00	3.693117	90	50 - 150	0.0000	+/-0.50	
MPFDoA	1499928	4.128783	1,594,256.00	4.136817	94	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	281015.1	4.00145	294,893.00	4.001467	95	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	288051.4	3.921883	301,628.00	3.921883	95	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
22MTN S-3 (6-12) (21J1976-03)			Lab File ID: 21J1976-03.d			Analyzed: 11/11/21 18:47			
M8FOSA	419211	4.036517	451,140.00	4.044517	93	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	139286.8	2.57895	207,338.00	2.58715	67	50 - 150	-0.0082	+/-0.50	
M2PFTA	1800500	4.370283	1,799,881.00	4.378417	100	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	221329.7	3.850917	225,194.00	3.850917	98	50 - 150	0.0000	+/-0.50	
MPFBA	717212.5	1.108317	819,390.00	1.108317	88	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	203791.3	2.91295	298,883.00	2.91295	68	50 - 150	0.0000	+/-0.50	
M6PFDA	1174345	3.84345	1,173,486.00	3.851417	100	50 - 150	-0.0080	+/-0.50	
M3PFBS	167447.8	1.969733	190,139.00	1.969733	88	50 - 150	0.0000	+/-0.50	
M7PFUnA	1561098	3.993983	1,524,213.00	3.993983	102	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	152802.4	3.493333	131,267.00	3.493333	116	50 - 150	0.0000	+/-0.50	
M5PFPeA	707174.3	1.7826	823,921.00	1.791367	86	50 - 150	-0.0088	+/-0.50	
M5PFHxA	975872.3	2.672333	1,131,820.00	2.672333	86	50 - 150	0.0000	+/-0.50	
M3PFHxS	129127.2	3.266817	141,124.00	3.266833	91	50 - 150	0.0000	+/-0.50	
M4PFHpA	1069471	3.2357	1,179,935.00	3.2357	91	50 - 150	0.0000	+/-0.50	
M8PFOA	1011779	3.50185	1,119,574.00	3.50185	90	50 - 150	0.0000	+/-0.50	
M8PFOS	147331	3.692067	163,358.00	3.692083	90	50 - 150	0.0000	+/-0.50	
M9PFNA	928541.6	3.693117	1,027,621.00	3.693117	90	50 - 150	0.0000	+/-0.50	
MPFDoA	1625867	4.128783	1,594,256.00	4.136817	102	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	275121.8	4.00145	294,893.00	4.001467	93	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	337002.6	3.921883	301,628.00	3.921883	112	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
22MTN S-4 (6-12) (21J1976-04)			Lab File ID: 21J1976-04.d			Analyzed: 11/11/21 18:54			
M8FOSA	387797	4.044517	451,140.00	4.044517	86	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	117561.4	2.57895	207,338.00	2.58715	57	50 - 150	-0.0082	+/-0.50	
M2PFTA	1563076	4.370283	1,799,881.00	4.378417	87	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	214924.5	3.850917	225,194.00	3.850917	95	50 - 150	0.0000	+/-0.50	
MPFBA	664655.2	1.108317	819,390.00	1.108317	81	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	187225.9	2.91295	298,883.00	2.91295	63	50 - 150	0.0000	+/-0.50	
M6PFDA	1081162	3.851417	1,173,486.00	3.851417	92	50 - 150	0.0000	+/-0.50	
M3PFBS	154457.5	1.969733	190,139.00	1.969733	81	50 - 150	0.0000	+/-0.50	
M7PFUnA	1340548	3.993983	1,524,213.00	3.993983	88	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	123343.6	3.493333	131,267.00	3.493333	94	50 - 150	0.0000	+/-0.50	
M5PFPeA	657611.1	1.791367	823,921.00	1.791367	80	50 - 150	0.0000	+/-0.50	
M5PFHxA	908011.6	2.672333	1,131,820.00	2.672333	80	50 - 150	0.0000	+/-0.50	
M3PFHxS	118185.6	3.266817	141,124.00	3.266833	84	50 - 150	0.0000	+/-0.50	
M4PFHpA	988219.1	3.2357	1,179,935.00	3.2357	84	50 - 150	0.0000	+/-0.50	
M8PFOA	952454	3.50185	1,119,574.00	3.50185	85	50 - 150	0.0000	+/-0.50	
M8PFOS	134907.4	3.692083	163,358.00	3.692083	83	50 - 150	0.0000	+/-0.50	
M9PFNA	804371.2	3.693117	1,027,621.00	3.693117	78	50 - 150	0.0000	+/-0.50	
MPFDoA	1377249	4.128783	1,594,256.00	4.136817	86	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	261749.2	4.00145	294,893.00	4.001467	89	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	306578	3.921883	301,628.00	3.921883	102	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
22MTN S-4 (12-18) (21J1976-05)			Lab File ID: 21J1976-05.d		Analyzed: 11/11/21 19:01				
M8FOSA	383375.9	4.036517	451,140.00	4.044517	85	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	126238.4	2.57895	207,338.00	2.58715	61	50 - 150	-0.0082	+/-0.50	
M2PFTA	1588009	4.370283	1,799,881.00	4.378417	88	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	213301.6	3.850917	225,194.00	3.850917	95	50 - 150	0.0000	+/-0.50	
MPFBA	666706.6	1.108317	819,390.00	1.108317	81	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	186489.3	2.904767	298,883.00	2.91295	62	50 - 150	-0.0082	+/-0.50	
M6PFDA	1064543	3.84345	1,173,486.00	3.851417	91	50 - 150	-0.0080	+/-0.50	
M3PFBS	157315.4	1.969733	190,139.00	1.969733	83	50 - 150	0.0000	+/-0.50	
M7PFUnA	1310478	3.993983	1,524,213.00	3.993983	86	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	108545.7	3.493333	131,267.00	3.493333	83	50 - 150	0.0000	+/-0.50	
M5PFPeA	657817.8	1.7826	823,921.00	1.791367	80	50 - 150	-0.0088	+/-0.50	
M5PFHxA	912459.3	2.663233	1,131,820.00	2.672333	81	50 - 150	-0.0091	+/-0.50	
M3PFHxS	122659.1	3.266817	141,124.00	3.266833	87	50 - 150	0.0000	+/-0.50	
M4PFHpA	975282.1	3.227617	1,179,935.00	3.2357	83	50 - 150	-0.0081	+/-0.50	
M8PFOA	917365.1	3.50185	1,119,574.00	3.50185	82	50 - 150	0.0000	+/-0.50	
M8PFOS	140545.1	3.692067	163,358.00	3.692083	86	50 - 150	0.0000	+/-0.50	
M9PFNA	821053.3	3.693117	1,027,621.00	3.693117	80	50 - 150	0.0000	+/-0.50	
MPFDoA	1349795	4.128783	1,594,256.00	4.136817	85	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	247444.3	4.00145	294,893.00	4.001467	84	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	303037.1	3.921883	301,628.00	3.921883	100	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
22MTN S-5 (6-12) (21J1976-06)			Lab File ID: 21J1976-06.d		Analyzed: 11/11/21 19:08				
M8FOSA	476329.8	4.036517	451,140.00	4.044517	106	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	173623.5	2.57895	207,338.00	2.58715	84	50 - 150	-0.0082	+/-0.50	
M2PFTA	2031687	4.370283	1,799,881.00	4.378417	113	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	213512.6	3.842967	225,194.00	3.850917	95	50 - 150	-0.0080	+/-0.50	
MPFBA	830626	1.108317	819,390.00	1.108317	101	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	248106.7	2.904767	298,883.00	2.91295	83	50 - 150	-0.0082	+/-0.50	
M6PFDA	1265129	3.84345	1,173,486.00	3.851417	108	50 - 150	-0.0080	+/-0.50	
M3PFBS	186942.6	1.969733	190,139.00	1.969733	98	50 - 150	0.0000	+/-0.50	
M7PFUnA	1640135	3.993983	1,524,213.00	3.993983	108	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	121302.3	3.493333	131,267.00	3.493333	92	50 - 150	0.0000	+/-0.50	
M5PFPeA	824552.4	1.7826	823,921.00	1.791367	100	50 - 150	-0.0088	+/-0.50	
M5PFHxA	1113769	2.663233	1,131,820.00	2.672333	98	50 - 150	-0.0091	+/-0.50	
M3PFHxS	144825.1	3.266817	141,124.00	3.266833	103	50 - 150	0.0000	+/-0.50	
M4PFHpA	1166108	3.227617	1,179,935.00	3.2357	99	50 - 150	-0.0081	+/-0.50	
M8PFOA	1164376	3.50185	1,119,574.00	3.50185	104	50 - 150	0.0000	+/-0.50	
M8PFOS	164013.8	3.692083	163,358.00	3.692083	100	50 - 150	0.0000	+/-0.50	
M9PFNA	1047387	3.693117	1,027,621.00	3.693117	102	50 - 150	0.0000	+/-0.50	
MPFDoA	1679193	4.128783	1,594,256.00	4.136817	105	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	283125.3	4.001467	294,893.00	4.001467	96	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	312827.8	3.921883	301,628.00	3.921883	104	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
22MTN S-5 (12-18) (21J1976-07)			Lab File ID: 21J1976-07.d			Analyzed: 11/11/21 19:16			
M8FOSA	475376.3	4.036517	451,140.00	4.044517	105	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	178865.3	2.57895	207,338.00	2.58715	86	50 - 150	-0.0082	+/-0.50	
M2PFTA	1791708	4.370283	1,799,881.00	4.378417	100	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	229832.2	3.842967	225,194.00	3.850917	102	50 - 150	-0.0080	+/-0.50	
MPFBA	820871.1	1.108317	819,390.00	1.108317	100	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	242707.1	2.904767	298,883.00	2.91295	81	50 - 150	-0.0082	+/-0.50	
M6PFDA	1298725	3.84345	1,173,486.00	3.851417	111	50 - 150	-0.0080	+/-0.50	
M3PFBS	184708.9	1.969733	190,139.00	1.969733	97	50 - 150	0.0000	+/-0.50	
M7PFUnA	1526839	3.993983	1,524,213.00	3.993983	100	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	125376.7	3.493333	131,267.00	3.493333	96	50 - 150	0.0000	+/-0.50	
M5PFPeA	802461.9	1.7826	823,921.00	1.791367	97	50 - 150	-0.0088	+/-0.50	
M5PFHxA	1098819	2.663233	1,131,820.00	2.672333	97	50 - 150	-0.0091	+/-0.50	
M3PFHxS	137832.6	3.266817	141,124.00	3.266833	98	50 - 150	0.0000	+/-0.50	
M4PFHpA	1200803	3.227617	1,179,935.00	3.2357	102	50 - 150	-0.0081	+/-0.50	
M8PFOA	1121154	3.50185	1,119,574.00	3.50185	100	50 - 150	0.0000	+/-0.50	
M8PFOS	162334.4	3.692067	163,358.00	3.692083	99	50 - 150	0.0000	+/-0.50	
M9PFNA	989024.8	3.693117	1,027,621.00	3.693117	96	50 - 150	0.0000	+/-0.50	
MPFDoA	1645094	4.128783	1,594,256.00	4.136817	103	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	283688.1	4.00145	294,893.00	4.001467	96	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	317231.2	3.921883	301,628.00	3.921883	105	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
22MTN S-6 (6-12) (21J1976-08)			Lab File ID: 21J1976-08.d			Analyzed: 11/11/21 19:23			
M8FOSA	459365.8	4.036517	451,140.00	4.044517	102	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	166324.4	2.57895	207,338.00	2.58715	80	50 - 150	-0.0082	+/-0.50	
M2PFTA	2005032	4.370283	1,799,881.00	4.378417	111	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	225213.5	3.842967	225,194.00	3.850917	100	50 - 150	-0.0080	+/-0.50	
MPFBA	792463.8	1.108317	819,390.00	1.108317	97	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	220522.5	2.904767	298,883.00	2.91295	74	50 - 150	-0.0082	+/-0.50	
M6PFDA	1249794	3.84345	1,173,486.00	3.851417	107	50 - 150	-0.0080	+/-0.50	
M3PFBS	183040.1	1.969733	190,139.00	1.969733	96	50 - 150	0.0000	+/-0.50	
M7PFUnA	1536754	3.993983	1,524,213.00	3.993983	101	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	135981.6	3.493333	131,267.00	3.493333	104	50 - 150	0.0000	+/-0.50	
M5PFPeA	786260.8	1.7826	823,921.00	1.791367	95	50 - 150	-0.0088	+/-0.50	
M5PFHxA	1094064	2.663233	1,131,820.00	2.672333	97	50 - 150	-0.0091	+/-0.50	
M3PFHxS	136096.9	3.25875	141,124.00	3.266833	96	50 - 150	-0.0081	+/-0.50	
M4PFHpA	1172330	3.227617	1,179,935.00	3.2357	99	50 - 150	-0.0081	+/-0.50	
M8PFOA	1119189	3.50185	1,119,574.00	3.50185	100	50 - 150	0.0000	+/-0.50	
M8PFOS	156861.9	3.692083	163,358.00	3.692083	96	50 - 150	0.0000	+/-0.50	
M9PFNA	992551.4	3.693117	1,027,621.00	3.693117	97	50 - 150	0.0000	+/-0.50	
MPFDoA	1729424	4.128783	1,594,256.00	4.136817	108	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	283556.7	4.00145	294,893.00	4.001467	96	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	328569.6	3.921883	301,628.00	3.921883	109	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
22MTN S-7 (6-12) (21J1976-09)			Lab File ID: 21J1976-09.d			Analyzed: 11/11/21 19:30			
M8FOSA	414163.6	4.036517	451,140.00	4.044517	92	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	130763.2	2.57895	207,338.00	2.58715	63	50 - 150	-0.0082	+/-0.50	
M2PFTA	1646267	4.370283	1,799,881.00	4.378417	91	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	196554.5	3.850917	225,194.00	3.850917	87	50 - 150	0.0000	+/-0.50	
MPFBA	644688.1	1.108317	819,390.00	1.108317	79	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	181894.4	2.91295	298,883.00	2.91295	61	50 - 150	0.0000	+/-0.50	
M6PFDA	1037796	3.84345	1,173,486.00	3.851417	88	50 - 150	-0.0080	+/-0.50	
M3PFBS	152862.1	1.969733	190,139.00	1.969733	80	50 - 150	0.0000	+/-0.50	
M7PFUnA	1336919	3.993983	1,524,213.00	3.993983	88	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	109072.7	3.493333	131,267.00	3.493333	83	50 - 150	0.0000	+/-0.50	
M5PFPeA	647382.1	1.7826	823,921.00	1.791367	79	50 - 150	-0.0088	+/-0.50	
M5PFHxA	900214.1	2.672333	1,131,820.00	2.672333	80	50 - 150	0.0000	+/-0.50	
M3PFHxS	115286.8	3.266817	141,124.00	3.266833	82	50 - 150	0.0000	+/-0.50	
M4PFHpA	968213.1	3.2357	1,179,935.00	3.2357	82	50 - 150	0.0000	+/-0.50	
M8PFOA	954341.3	3.50185	1,119,574.00	3.50185	85	50 - 150	0.0000	+/-0.50	
M8PFOS	143482.3	3.692083	163,358.00	3.692083	88	50 - 150	0.0000	+/-0.50	
M9PFNA	862031.6	3.693117	1,027,621.00	3.693117	84	50 - 150	0.0000	+/-0.50	
MPFDoA	1513882	4.128783	1,594,256.00	4.136817	95	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	265645.1	4.00145	294,893.00	4.001467	90	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	322240.9	3.921883	301,628.00	3.921883	107	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
22MTN S-8 (6-12) (21J1976-10)			Lab File ID: 21J1976-10.d		Analyzed: 11/11/21 19:37				
M8FOSA	429542.5	4.036517	451,140.00	4.044517	95	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	142404.6	2.57895	207,338.00	2.58715	69	50 - 150	-0.0082	+/-0.50	
M2PFTA	1744823	4.370283	1,799,881.00	4.378417	97	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	252921.1	3.850917	225,194.00	3.850917	112	50 - 150	0.0000	+/-0.50	
MPFBA	715708.1	1.108317	819,390.00	1.108317	87	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	210972.2	2.91295	298,883.00	2.91295	71	50 - 150	0.0000	+/-0.50	
M6PFDA	1100976	3.84345	1,173,486.00	3.851417	94	50 - 150	-0.0080	+/-0.50	
M3PFBS	167831.8	1.969733	190,139.00	1.969733	88	50 - 150	0.0000	+/-0.50	
M7PFUnA	1148787	3.993983	1,524,213.00	3.993983	75	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	132266.6	3.493333	131,267.00	3.493333	101	50 - 150	0.0000	+/-0.50	
M5PFPeA	705230.6	1.7826	823,921.00	1.791367	86	50 - 150	-0.0088	+/-0.50	
M5PFHxA	985319.6	2.672333	1,131,820.00	2.672333	87	50 - 150	0.0000	+/-0.50	
M3PFHxS	129234.8	3.266817	141,124.00	3.266833	92	50 - 150	0.0000	+/-0.50	
M4PFHpA	1057264	3.2357	1,179,935.00	3.2357	90	50 - 150	0.0000	+/-0.50	
M8PFOA	1027628	3.50185	1,119,574.00	3.50185	92	50 - 150	0.0000	+/-0.50	
M8PFOS	149674.9	3.692067	163,358.00	3.692083	92	50 - 150	0.0000	+/-0.50	
M9PFNA	932227.2	3.693117	1,027,621.00	3.693117	91	50 - 150	0.0000	+/-0.50	
MPFDoA	1548333	4.128783	1,594,256.00	4.136817	97	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	218857	4.00145	294,893.00	4.001467	74	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	359520.1	3.921883	301,628.00	3.921883	119	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
22MTN S-8 (12-18) (21J1976-11) Lab File ID: 21J1976-11.d Analyzed: 11/11/21 19:52									
M8FOSA	465544	4.036517	451,140.00	4.036517	103	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	156888.6	2.57895	207,338.00	2.57895	76	50 - 150	0.0000	+/-0.50	
M2PFTA	1949335	4.370283	1,799,881.00	4.370283	108	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	261418.6	3.850917	225,194.00	3.842967	116	50 - 150	0.0080	+/-0.50	
MPFBA	775907.3	1.108317	819,390.00	1.100017	95	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	221468.9	2.904767	298,883.00	2.904767	74	50 - 150	0.0000	+/-0.50	
M6PFDA	1210233	3.84345	1,173,486.00	3.84345	103	50 - 150	0.0000	+/-0.50	
M3PFBS	177243.9	1.969733	190,139.00	1.969733	93	50 - 150	0.0000	+/-0.50	
M7PFUnA	1274838	3.993983	1,524,213.00	3.993983	84	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	131938.5	3.493333	131,267.00	3.493333	101	50 - 150	0.0000	+/-0.50	
M5PFPeA	765626.3	1.7826	823,921.00	1.7826	93	50 - 150	0.0000	+/-0.50	
M5PFHxA	1060348	2.663233	1,131,820.00	2.663233	94	50 - 150	0.0000	+/-0.50	
M3PFHxS	137153.3	3.266817	141,124.00	3.25875	97	50 - 150	0.0081	+/-0.50	
M4PFHpA	1139615	3.227617	1,179,935.00	3.227617	97	50 - 150	0.0000	+/-0.50	
M8PFOA	1104311	3.50185	1,119,574.00	3.50185	99	50 - 150	0.0000	+/-0.50	
M8PFOS	160324.4	3.692067	163,358.00	3.692083	98	50 - 150	0.0000	+/-0.50	
M9PFNA	982692.6	3.693117	1,027,621.00	3.693117	96	50 - 150	0.0000	+/-0.50	
MPFDoA	1707133	4.128783	1,594,256.00	4.128783	107	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	211800.5	4.00145	294,893.00	4.001467	72	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	370427.3	3.921883	301,628.00	3.921883	123	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
22MTN S-10 (0-6) (21J1976-12)			Lab File ID: 21J1976-12.d			Analyzed: 11/11/21 19:59			
M8FOSA	397274.8	4.036517	451,140.00	4.036517	88	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	125346.5	2.57895	207,338.00	2.57895	60	50 - 150	0.0000	+/-0.50	
M2PFTA	1585461	4.370283	1,799,881.00	4.370283	88	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	205199.2	3.842967	225,194.00	3.842967	91	50 - 150	0.0000	+/-0.50	
MPFBA	690622.6	1.108317	819,390.00	1.100017	84	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	201377.7	2.904767	298,883.00	2.904767	67	50 - 150	0.0000	+/-0.50	
M6PFDA	1095949	3.84345	1,173,486.00	3.84345	93	50 - 150	0.0000	+/-0.50	
M3PFBS	162525.8	1.969733	190,139.00	1.969733	85	50 - 150	0.0000	+/-0.50	
M7PFUnA	1361680	3.993983	1,524,213.00	3.993983	89	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	114930.7	3.493333	131,267.00	3.493333	88	50 - 150	0.0000	+/-0.50	
M5PFPeA	697845.1	1.7826	823,921.00	1.7826	85	50 - 150	0.0000	+/-0.50	
M5PFHxA	960234.7	2.663233	1,131,820.00	2.663233	85	50 - 150	0.0000	+/-0.50	
M3PFHxS	125435.2	3.25875	141,124.00	3.25875	89	50 - 150	0.0000	+/-0.50	
M4PFHpA	1028650	3.227617	1,179,935.00	3.227617	87	50 - 150	0.0000	+/-0.50	
M8PFOA	1017987	3.50185	1,119,574.00	3.50185	91	50 - 150	0.0000	+/-0.50	
M8PFOS	140997.2	3.692083	163,358.00	3.692083	86	50 - 150	0.0000	+/-0.50	
M9PFNA	925321.6	3.693117	1,027,621.00	3.693117	90	50 - 150	0.0000	+/-0.50	
MPFDoA	1438261	4.128783	1,594,256.00	4.128783	90	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	270123.1	4.001467	294,893.00	4.001467	92	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	309099.9	3.921883	301,628.00	3.921883	102	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
22MTN S-11 (0-12) (21J1976-13)									
			Lab File ID: 21J1976-13.d			Analyzed: 11/11/21 20:06			
M8FOSA	438224.6	4.036517	451,140.00	4.036517	97	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	148956.3	2.57895	207,338.00	2.57895	72	50 - 150	0.0000	+/-0.50	
M2PFTA	1717888	4.370283	1,799,881.00	4.370283	95	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	212808.3	3.842967	225,194.00	3.842967	95	50 - 150	0.0000	+/-0.50	
MPFBA	736721.4	1.108317	819,390.00	1.100017	90	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	204393	2.904767	298,883.00	2.904767	68	50 - 150	0.0000	+/-0.50	
M6PFDA	1155640	3.84345	1,173,486.00	3.84345	98	50 - 150	0.0000	+/-0.50	
M3PFBS	167581.6	1.96145	190,139.00	1.969733	88	50 - 150	-0.0083	+/-0.50	
M7PFUnA	1506896	3.993983	1,524,213.00	3.993983	99	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	115420.5	3.493333	131,267.00	3.493333	88	50 - 150	0.0000	+/-0.50	
M5PFPeA	729330.4	1.7826	823,921.00	1.7826	89	50 - 150	0.0000	+/-0.50	
M5PFHxA	986907.6	2.663233	1,131,820.00	2.663233	87	50 - 150	0.0000	+/-0.50	
M3PFHxS	127397.3	3.25875	141,124.00	3.25875	90	50 - 150	0.0000	+/-0.50	
M4PFHpA	1042270	3.227617	1,179,935.00	3.227617	88	50 - 150	0.0000	+/-0.50	
M8PFOA	1037192	3.50185	1,119,574.00	3.50185	93	50 - 150	0.0000	+/-0.50	
M8PFOS	148568.1	3.692083	163,358.00	3.692083	91	50 - 150	0.0000	+/-0.50	
M9PFNA	937900.5	3.693117	1,027,621.00	3.693117	91	50 - 150	0.0000	+/-0.50	
MPFDoA	1463697	4.128783	1,594,256.00	4.128783	92	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	276344.3	4.00145	294,893.00	4.001467	94	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	355494.3	3.921883	301,628.00	3.921883	118	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
22MTN S-12 (0-12) (21J1976-14)									
			Lab File ID: 21J1976-14.d			Analyzed: 11/11/21 20:14			
M8FOSA	373379.6	4.036517	451,140.00	4.036517	83	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	149580.7	2.570733	207,338.00	2.57895	72	50 - 150	-0.0082	+/-0.50	
M2PFTA	1608890	4.370283	1,799,881.00	4.370283	89	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	336807.3	3.842967	225,194.00	3.842967	150	50 - 150	0.0000	+/-0.50	
MPFBA	663085.1	1.108317	819,390.00	1.100017	81	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	189575.1	2.904767	298,883.00	2.904767	63	50 - 150	0.0000	+/-0.50	
M6PFDA	1027355	3.84345	1,173,486.00	3.84345	88	50 - 150	0.0000	+/-0.50	
M3PFBS	152842	1.96145	190,139.00	1.969733	80	50 - 150	-0.0083	+/-0.50	
M7PFUnA	1270230	3.993983	1,524,213.00	3.993983	83	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	183976	3.493333	131,267.00	3.493333	140	50 - 150	0.0000	+/-0.50	
M5PFPeA	661674.4	1.7826	823,921.00	1.7826	80	50 - 150	0.0000	+/-0.50	
M5PFHxA	919430	2.663233	1,131,820.00	2.663233	81	50 - 150	0.0000	+/-0.50	
M3PFHxS	116671.4	3.258733	141,124.00	3.25875	83	50 - 150	0.0000	+/-0.50	
M4PFHpA	939036.7	3.227617	1,179,935.00	3.227617	80	50 - 150	0.0000	+/-0.50	
M8PFOA	927827.3	3.50185	1,119,574.00	3.50185	83	50 - 150	0.0000	+/-0.50	
M8PFOS	132138.2	3.692067	163,358.00	3.692083	81	50 - 150	0.0000	+/-0.50	
M9PFNA	814223.4	3.693117	1,027,621.00	3.693117	79	50 - 150	0.0000	+/-0.50	
MPFDoA	1386183	4.128783	1,594,256.00	4.128783	87	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	300486.2	4.00145	294,893.00	4.001467	102	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	289006.6	3.921883	301,628.00	3.921883	96	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
22MTN S-13 (0-12) (21J1976-15)			Lab File ID: 21J1976-15.d			Analyzed: 11/11/21 20:21			
M8FOSA	404318.1	4.036517	451,140.00	4.036517	90	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	159620	2.562517	207,338.00	2.57895	77	50 - 150	-0.0164	+/-0.50	
M2PFTA	1902844	4.370283	1,799,881.00	4.370283	106	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	285375.7	3.842967	225,194.00	3.842967	127	50 - 150	0.0000	+/-0.50	
MPFBA	743525.2	1.100017	819,390.00	1.100017	91	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	217271.1	2.896583	298,883.00	2.904767	73	50 - 150	-0.0082	+/-0.50	
M6PFDA	1138506	3.84345	1,173,486.00	3.84345	97	50 - 150	0.0000	+/-0.50	
M3PFBS	176920.5	1.95315	190,139.00	1.969733	93	50 - 150	-0.0166	+/-0.50	
M7PFUnA	1555752	3.986	1,524,213.00	3.993983	102	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	158660.7	3.48535	131,267.00	3.493333	121	50 - 150	-0.0080	+/-0.50	
M5PFPeA	756301.1	1.7743	823,921.00	1.7826	92	50 - 150	-0.0083	+/-0.50	
M5PFHxA	1034738	2.655	1,131,820.00	2.663233	91	50 - 150	-0.0082	+/-0.50	
M3PFHxS	134964.4	3.25875	141,124.00	3.25875	96	50 - 150	0.0000	+/-0.50	
M4PFHpA	1081402	3.227617	1,179,935.00	3.227617	92	50 - 150	0.0000	+/-0.50	
M8PFOA	1056679	3.50185	1,119,574.00	3.50185	94	50 - 150	0.0000	+/-0.50	
M8PFOS	153142.5	3.684083	163,358.00	3.692083	94	50 - 150	-0.0080	+/-0.50	
M9PFNA	958929.1	3.685133	1,027,621.00	3.693117	93	50 - 150	-0.0080	+/-0.50	
MPFDoA	1649974	4.128783	1,594,256.00	4.128783	103	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	329594.8	3.993467	294,893.00	4.001467	112	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	349105.5	3.921883	301,628.00	3.921883	116	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
22MTN S-13 (12-24) (21J1976-16)			Lab File ID: 21J1976-16.d			Analyzed: 11/11/21 20:28			
M8FOSA	442157	4.036517	451,140.00	4.036517	98	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	155146.9	2.562517	207,338.00	2.57895	75	50 - 150	-0.0164	+/-0.50	
M2PFTA	1727971	4.370283	1,799,881.00	4.370283	96	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	215760.1	3.842967	225,194.00	3.842967	96	50 - 150	0.0000	+/-0.50	
MPFBA	741130.9	1.100017	819,390.00	1.100017	90	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	215801.5	2.896583	298,883.00	2.904767	72	50 - 150	-0.0082	+/-0.50	
M6PFDA	1101132	3.84345	1,173,486.00	3.84345	94	50 - 150	0.0000	+/-0.50	
M3PFBS	169560.2	1.95315	190,139.00	1.969733	89	50 - 150	-0.0166	+/-0.50	
M7PFUnA	1405355	3.986	1,524,213.00	3.993983	92	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	109413.9	3.48535	131,267.00	3.493333	83	50 - 150	-0.0080	+/-0.50	
M5PFPeA	728847.4	1.7743	823,921.00	1.7826	88	50 - 150	-0.0083	+/-0.50	
M5PFHxA	996209.3	2.655	1,131,820.00	2.663233	88	50 - 150	-0.0082	+/-0.50	
M3PFHxS	132510.3	3.25875	141,124.00	3.25875	94	50 - 150	0.0000	+/-0.50	
M4PFHpA	1041363	3.227617	1,179,935.00	3.227617	88	50 - 150	0.0000	+/-0.50	
M8PFOA	1023823	3.50185	1,119,574.00	3.50185	91	50 - 150	0.0000	+/-0.50	
M8PFOS	144667.9	3.684083	163,358.00	3.692083	89	50 - 150	-0.0080	+/-0.50	
M9PFNA	931973	3.685133	1,027,621.00	3.693117	91	50 - 150	-0.0080	+/-0.50	
MPFDoA	1498037	4.128783	1,594,256.00	4.128783	94	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	280826.1	3.993467	294,893.00	4.001467	95	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	342764.7	3.921883	301,628.00	3.921883	114	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Trip Blank (21J1976-17)			Lab File ID: 21J1976-17R.d			Analyzed: 11/09/21 18:27			
M8FOSA	378145.8	4.0525	365,630.00	4.0525	103	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	90339.15	2.6118	176,034.00	2.6118	51	50 - 150	0.0000	+/-0.50	
M2PFTA	1736822	4.3784	1,459,197.00	4.386533	119	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	131398.8	3.858883	180,557.00	3.858883	73	50 - 150	0.0000	+/-0.50	
MPFBA	899904.9	1.116633	665,049.00	1.108317	135	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	338528	2.929717	305,122.00	2.929717	111	50 - 150	0.0000	+/-0.50	
M6PFDA	1145450	3.851417	906,735.00	3.851417	126	50 - 150	0.0000	+/-0.50	
M3PFBS	197353.1	1.9945	160,570.00	1.9945	123	50 - 150	0.0000	+/-0.50	
M7PFUnA	1503454	4.001983	1,106,943.00	4.001983	136	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	85572.05	3.501317	113,759.00	3.501317	75	50 - 150	0.0000	+/-0.50	
M5PFPeA	848184.8	1.80795	686,897.00	1.80795	123	50 - 150	0.0000	+/-0.50	
M5PFHxA	1156343	2.706317	886,969.00	2.69695	130	50 - 150	0.0094	+/-0.50	
M3PFHxS	143373.8	3.2762	125,041.00	3.2762	115	50 - 150	0.0000	+/-0.50	
M4PFHpA	1194945	3.243783	931,364.00	3.243783	128	50 - 150	0.0000	+/-0.50	
M8PFOA	1143403	3.51015	889,744.00	3.51015	129	50 - 150	0.0000	+/-0.50	
M8PFOS	159131.7	3.70005	133,024.00	3.70005	120	50 - 150	0.0000	+/-0.50	
M9PFNA	1011333	3.7011	809,610.00	3.7011	125	50 - 150	0.0000	+/-0.50	
MPFDoA	1354088	4.144834	1,183,580.00	4.144834	114	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	244034.6	4.00945	248,809.00	4.00945	98	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	253188.5	3.929867	276,127.00	3.929867	92	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Field Blank (21J1976-18)									
			Lab File ID: 21J1976-18R.d			Analyzed: 11/09/21 18:48			
M8FOSA	478233.8	4.0525	365,630.00	4.0525	131	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	144940.2	2.6118	176,034.00	2.6118	82	50 - 150	0.0000	+/-0.50	
M2PFTA	1679345	4.3784	1,459,197.00	4.3784	115	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	157485.8	3.850917	180,557.00	3.858883	87	50 - 150	-0.0080	+/-0.50	
MPFBA	1020134	1.108317	665,049.00	1.108317	153	50 - 150	0.0000	+/-0.50	*
M3HFPO-DA	349652.5	2.929717	305,122.00	2.929717	115	50 - 150	0.0000	+/-0.50	
M6PFDA	1278629	3.851417	906,735.00	3.851417	141	50 - 150	0.0000	+/-0.50	
M3PFBS	230967.4	1.9945	160,570.00	1.9945	144	50 - 150	0.0000	+/-0.50	
M7PFUnA	1796940	4.001983	1,106,943.00	4.001983	162	50 - 150	0.0000	+/-0.50	*
M2-6:2FTS	110138.3	3.501317	113,759.00	3.501317	97	50 - 150	0.0000	+/-0.50	
M5PFPeA	982301.9	1.80795	686,897.00	1.80795	143	50 - 150	0.0000	+/-0.50	
M5PFHxA	1324353	2.706317	886,969.00	2.696967	149	50 - 150	0.0093	+/-0.50	
M3PFHxS	175785.8	3.2762	125,041.00	3.2762	141	50 - 150	0.0000	+/-0.50	
M4PFHpA	1394161	3.243767	931,364.00	3.243783	150	50 - 150	0.0000	+/-0.50	
M8PFOA	1314313	3.51015	889,744.00	3.51015	148	50 - 150	0.0000	+/-0.50	
M8PFOS	194048.1	3.70005	133,024.00	3.70005	146	50 - 150	0.0000	+/-0.50	
M9PFNA	1184800	3.7011	809,610.00	3.7011	146	50 - 150	0.0000	+/-0.50	
MPFDoA	1612656	4.136817	1,183,580.00	4.144834	136	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	292173.9	4.00945	248,809.00	4.00945	117	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	328726.4	3.929867	276,127.00	3.929867	119	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Equipment Blank (21J1976-19)			Lab File ID: 21J1976-19R.d			Analyzed: 11/09/21 18:56			
M8FOSA	414108	4.0525	365,630.00	4.0525	113	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	154574.5	2.6118	176,034.00	2.6118	88	50 - 150	0.0000	+/-0.50	
M2PFTA	1725172	4.3784	1,459,197.00	4.3784	118	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	170472.6	3.858883	180,557.00	3.858883	94	50 - 150	0.0000	+/-0.50	
MPFBA	950084.4	1.108317	665,049.00	1.108317	143	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	348575.7	2.929717	305,122.00	2.929717	114	50 - 150	0.0000	+/-0.50	
M6PFDA	1263403	3.851417	906,735.00	3.851417	139	50 - 150	0.0000	+/-0.50	
M3PFBS	216301.8	1.9945	160,570.00	1.9945	135	50 - 150	0.0000	+/-0.50	
M7PFUnA	1658726	4.001983	1,106,943.00	4.001983	150	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	122291.7	3.501317	113,759.00	3.501317	108	50 - 150	0.0000	+/-0.50	
M5PFPeA	920383.3	1.80795	686,897.00	1.80795	134	50 - 150	0.0000	+/-0.50	
M5PFHxA	1231093	2.706317	886,969.00	2.696967	139	50 - 150	0.0093	+/-0.50	
M3PFHxS	167649	3.2762	125,041.00	3.2762	134	50 - 150	0.0000	+/-0.50	
M4PFHpA	1341247	3.243767	931,364.00	3.243783	144	50 - 150	0.0000	+/-0.50	
M8PFOA	1220119	3.51015	889,744.00	3.51015	137	50 - 150	0.0000	+/-0.50	
M8PFOS	178931.1	3.70005	133,024.00	3.70005	135	50 - 150	0.0000	+/-0.50	
M9PFNA	1120940	3.7011	809,610.00	3.7011	138	50 - 150	0.0000	+/-0.50	
MPFDoA	1417932	4.1368	1,183,580.00	4.144834	120	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	288160	4.00945	248,809.00	4.00945	116	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	272503.9	3.929867	276,127.00	3.929867	99	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Rinsate (21J1976-20) Lab File ID: 21J1976-20R.d Analyzed: 11/09/21 19:03									
M8FOSA	462414.8	4.0525	365,630.00	4.0525	126	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	176172.3	2.6118	176,034.00	2.6118	100	50 - 150	0.0000	+/-0.50	
M2PFTA	1869938	4.3784	1,459,197.00	4.3784	128	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	189978	3.858883	180,557.00	3.858883	105	50 - 150	0.0000	+/-0.50	
MPFBA	1014963	1.108317	665,049.00	1.108317	153	50 - 150	0.0000	+/-0.50	*
M3HFPO-DA	350121.9	2.929717	305,122.00	2.929717	115	50 - 150	0.0000	+/-0.50	
M6PFDA	1322218	3.851417	906,735.00	3.851417	146	50 - 150	0.0000	+/-0.50	
M3PFBS	227685.4	1.9945	160,570.00	1.9945	142	50 - 150	0.0000	+/-0.50	
M7PFUnA	1662200	4.001983	1,106,943.00	4.001983	150	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	123937.4	3.501317	113,759.00	3.501317	109	50 - 150	0.0000	+/-0.50	
M5PFPeA	984908.4	1.80795	686,897.00	1.80795	143	50 - 150	0.0000	+/-0.50	
M5PFHxA	1332349	2.706317	886,969.00	2.696967	150	50 - 150	0.0093	+/-0.50	
M3PFHxS	177671.7	3.2762	125,041.00	3.2762	142	50 - 150	0.0000	+/-0.50	
M4PFHpA	1375827	3.243767	931,364.00	3.243783	148	50 - 150	0.0000	+/-0.50	
M8PFOA	1311802	3.51015	889,744.00	3.51015	147	50 - 150	0.0000	+/-0.50	
M8PFOS	194292.8	3.70005	133,024.00	3.70005	146	50 - 150	0.0000	+/-0.50	
M9PFNA	1149684	3.7011	809,610.00	3.7011	142	50 - 150	0.0000	+/-0.50	
MPFDoA	1537687	4.144834	1,183,580.00	4.144834	130	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	312440	4.00945	248,809.00	4.00945	126	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	311957.3	3.929867	276,127.00	3.929867	113	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B293895-BLK1)			Lab File ID: B293895-BLK1.d			Analyzed: 11/08/21 10:51			
M8FOSA	360347.7	4.052533	339,382.00	4.044533	106	50 - 150	0.0080	+/-0.50	
M2-4:2FTS	173697.4	2.67895	143,359.00	2.678933	121	50 - 150	0.0000	+/-0.50	
M2PFTA	1456815	4.410933	1,310,564.00	4.410933	111	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	195293.1	3.883067	147,200.00	3.883067	133	50 - 150	0.0000	+/-0.50	
MPFBA	750445.9	1.13325	550,898.00	1.13325	136	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	211729.9	2.97845	203,262.00	2.97845	104	50 - 150	0.0000	+/-0.50	
M6PFDA	1086914	3.8756	844,341.00	3.883583	129	50 - 150	-0.0080	+/-0.50	
M3PFBS	160300.7	2.044233	129,662.00	2.054933	124	50 - 150	-0.0107	+/-0.50	
M7PFUnA	1435103	4.025983	1,071,417.00	4.033983	134	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	117499.8	3.525617	92,424.00	3.5336	127	50 - 150	-0.0080	+/-0.50	
M5PFPeA	739145.4	1.857667	565,564.00	1.857667	131	50 - 150	0.0000	+/-0.50	
M5PFHxA	1025358	2.7636	773,718.00	2.771783	133	50 - 150	-0.0082	+/-0.50	
M3PFHxS	129081.9	3.308383	103,548.00	3.308383	125	50 - 150	0.0000	+/-0.50	
M4PFHpA	1043177	3.277267	784,414.00	3.27725	133	50 - 150	0.0000	+/-0.50	
M8PFOA	1028305	3.53415	789,294.00	3.542133	130	50 - 150	-0.0080	+/-0.50	
M8PFOS	140014.5	3.716267	115,844.00	3.724233	121	50 - 150	-0.0080	+/-0.50	
M9PFNA	1067003	3.725233	804,190.00	3.725233	133	50 - 150	0.0000	+/-0.50	
MPFDoA	1328665	4.169283	1,127,246.00	4.169283	118	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	241598	4.03345	207,462.00	4.04145	116	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	249659.3	3.953883	198,246.00	3.961867	126	50 - 150	-0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B293895-BS1)									
			Lab File ID: B293895-BS1.d			Analyzed: 11/08/21 10:37			
M8FOSA	411593.3	4.052533	339,382.00	4.044533	121	50 - 150	0.0080	+/-0.50	
M2-4:2FTS	181999	2.68715	143,359.00	2.678933	127	50 - 150	0.0082	+/-0.50	
M2PFTA	1507396	4.410933	1,310,564.00	4.410933	115	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	215214.4	3.88305	147,200.00	3.883067	146	50 - 150	0.0000	+/-0.50	
MPFBA	777372.1	1.141567	550,898.00	1.13325	141	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	233092	2.986567	203,262.00	2.97845	115	50 - 150	0.0081	+/-0.50	
M6PFDA	1154806	3.883583	844,341.00	3.883583	137	50 - 150	0.0000	+/-0.50	
M3PFBS	171489.7	2.054933	129,662.00	2.054933	132	50 - 150	0.0000	+/-0.50	
M7PFUnA	1363129	4.033967	1,071,417.00	4.033983	127	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	132249.1	3.5336	92,424.00	3.5336	143	50 - 150	0.0000	+/-0.50	
M5PFPeA	776054.8	1.86595	565,564.00	1.857667	137	50 - 150	0.0083	+/-0.50	
M5PFHxA	1076656	2.771783	773,718.00	2.771783	139	50 - 150	0.0000	+/-0.50	
M3PFHxS	136727.9	3.308383	103,548.00	3.308383	132	50 - 150	0.0000	+/-0.50	
M4PFHpA	1143547	3.27725	784,414.00	3.27725	146	50 - 150	0.0000	+/-0.50	
M8PFOA	1102001	3.542133	789,294.00	3.542133	140	50 - 150	0.0000	+/-0.50	
M8PFOS	151012	3.724233	115,844.00	3.724233	130	50 - 150	0.0000	+/-0.50	
M9PFNA	1132298	3.725233	804,190.00	3.725233	141	50 - 150	0.0000	+/-0.50	
MPFDoA	1395201	4.169283	1,127,246.00	4.169283	124	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	253351.9	4.04145	207,462.00	4.04145	122	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	265779.8	3.961867	198,246.00	3.961867	134	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS Dup (B293895-BSD1)									
			Lab File ID: B293895-BSD1.d			Analyzed: 11/08/21 10:44			
M8FOSA	400913.8	4.052533	339,382.00	4.044533	118	50 - 150	0.0080	+/-0.50	
M2-4:2FTS	184214.7	2.678933	143,359.00	2.678933	128	50 - 150	0.0000	+/-0.50	
M2PF _T A	1516479	4.410933	1,310,564.00	4.410933	116	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	204794.4	3.88305	147,200.00	3.883067	139	50 - 150	0.0000	+/-0.50	
MPFBA	801384.3	1.13325	550,898.00	1.13325	145	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	242044.4	2.97845	203,262.00	2.97845	119	50 - 150	0.0000	+/-0.50	
M6PFDA	1162087	3.883583	844,341.00	3.883583	138	50 - 150	0.0000	+/-0.50	
M3PFBS	169370.9	2.044217	129,662.00	2.054933	131	50 - 150	-0.0107	+/-0.50	
M7PFU _n A	1420227	4.025983	1,071,417.00	4.033983	133	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	129238.9	3.525617	92,424.00	3.5336	140	50 - 150	-0.0080	+/-0.50	
M5PFPeA	786390.6	1.857667	565,564.00	1.857667	139	50 - 150	0.0000	+/-0.50	
M5PFH _x A	1106334	2.771783	773,718.00	2.771783	143	50 - 150	0.0000	+/-0.50	
M3PFH _x S	131843.5	3.308383	103,548.00	3.308383	127	50 - 150	0.0000	+/-0.50	
M4PFH _p A	1119623	3.27725	784,414.00	3.27725	143	50 - 150	0.0000	+/-0.50	
M8PFOA	1087704	3.542133	789,294.00	3.542133	138	50 - 150	0.0000	+/-0.50	
M8PFOS	154146.1	3.716267	115,844.00	3.724233	133	50 - 150	-0.0080	+/-0.50	
M9PFNA	1137439	3.725233	804,190.00	3.725233	141	50 - 150	0.0000	+/-0.50	
MPFD _o A	1420795	4.169283	1,127,246.00	4.169283	126	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	260542.4	4.04145	207,462.00	4.04145	126	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	281428.3	3.961867	198,246.00	3.961867	142	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B294243-BLK1)			Lab File ID: B294243-BLK1.d			Analyzed: 11/11/21 18:11			
M8FOSA	490342.2	4.044517	451,140.00	4.044517	109	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	205068.7	2.58715	207,338.00	2.58715	99	50 - 150	0.0000	+/-0.50	
M2PFTA	1870291	4.378417	1,799,881.00	4.378417	104	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	211172.3	3.850917	225,194.00	3.850917	94	50 - 150	0.0000	+/-0.50	
MPFBA	827123.1	1.108317	819,390.00	1.108317	101	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	273852.6	2.91295	298,883.00	2.91295	92	50 - 150	0.0000	+/-0.50	
M6PFDA	1316101	3.851417	1,173,486.00	3.851417	112	50 - 150	0.0000	+/-0.50	
M3PFBS	190587.5	1.978033	190,139.00	1.969733	100	50 - 150	0.0083	+/-0.50	
M7PFUnA	1551978	3.993983	1,524,213.00	3.993983	102	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	128916.8	3.493333	131,267.00	3.493333	98	50 - 150	0.0000	+/-0.50	
M5PFPeA	822307.6	1.791367	823,921.00	1.791367	100	50 - 150	0.0000	+/-0.50	
M5PFHxA	1134324	2.672333	1,131,820.00	2.672333	100	50 - 150	0.0000	+/-0.50	
M3PFHxS	143601.8	3.266817	141,124.00	3.266833	102	50 - 150	0.0000	+/-0.50	
M4PFHpA	1231164	3.2357	1,179,935.00	3.2357	104	50 - 150	0.0000	+/-0.50	
M8PFOA	1172033	3.50185	1,119,574.00	3.50185	105	50 - 150	0.0000	+/-0.50	
M8PFOS	159980.8	3.692067	163,358.00	3.692083	98	50 - 150	0.0000	+/-0.50	
M9PFNA	1024317	3.693117	1,027,621.00	3.693117	100	50 - 150	0.0000	+/-0.50	
MPFDoA	1656260	4.136817	1,594,256.00	4.136817	104	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	288367.4	4.00145	294,893.00	4.001467	98	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	317908.7	3.921883	301,628.00	3.921883	105	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B294243-BS1)									
			Lab File ID: B294243-BS1.d			Analyzed: 11/11/21 18:04			
M8FOSA	456748.8	4.044517	451,140.00	4.044517	101	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	197303.9	2.58715	207,338.00	2.58715	95	50 - 150	0.0000	+/-0.50	
M2PFTA	1803860	4.378417	1,799,881.00	4.378417	100	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	224793.7	3.850917	225,194.00	3.850917	100	50 - 150	0.0000	+/-0.50	
MPFBA	782645.7	1.108317	819,390.00	1.108317	96	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	250614.8	2.91295	298,883.00	2.91295	84	50 - 150	0.0000	+/-0.50	
M6PFDA	1179372	3.851417	1,173,486.00	3.851417	101	50 - 150	0.0000	+/-0.50	
M3PFBS	175368.7	1.978033	190,139.00	1.969733	92	50 - 150	0.0083	+/-0.50	
M7PFUnA	1501925	3.993983	1,524,213.00	3.993983	99	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	127828.5	3.493333	131,267.00	3.493333	97	50 - 150	0.0000	+/-0.50	
M5PFPeA	770826.9	1.791367	823,921.00	1.791367	94	50 - 150	0.0000	+/-0.50	
M5PFHxA	1077173	2.672333	1,131,820.00	2.672333	95	50 - 150	0.0000	+/-0.50	
M3PFHxS	132753.2	3.266833	141,124.00	3.266833	94	50 - 150	0.0000	+/-0.50	
M4PFHpA	1127470	3.2357	1,179,935.00	3.2357	96	50 - 150	0.0000	+/-0.50	
M8PFOA	1088199	3.50185	1,119,574.00	3.50185	97	50 - 150	0.0000	+/-0.50	
M8PFOS	147556.3	3.692083	163,358.00	3.692083	90	50 - 150	0.0000	+/-0.50	
M9PFNA	967232.6	3.693117	1,027,621.00	3.693117	94	50 - 150	0.0000	+/-0.50	
MPFDoA	1579796	4.128783	1,594,256.00	4.136817	99	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	275886.3	4.001467	294,893.00	4.001467	94	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	314601.8	3.921883	301,628.00	3.921883	104	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Matrix Spike (B294243-MS1)									
			Lab File ID: B294243-MS1.d			Analyzed: 11/11/21 18:18			
M8FOSA	425703.2	4.044517	451,140.00	4.044517	94	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	161929.7	2.58715	207,338.00	2.58715	78	50 - 150	0.0000	+/-0.50	
M2PFTA	1860962	4.378417	1,799,881.00	4.378417	103	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	190339.9	3.850933	225,194.00	3.850917	85	50 - 150	0.0000	+/-0.50	
MPFBA	712213.4	1.108317	819,390.00	1.108317	87	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	218456.4	2.91295	298,883.00	2.91295	73	50 - 150	0.0000	+/-0.50	
M6PFDA	1131923	3.851417	1,173,486.00	3.851417	96	50 - 150	0.0000	+/-0.50	
M3PFBS	168995.9	1.978033	190,139.00	1.969733	89	50 - 150	0.0083	+/-0.50	
M7PFUnA	1401613	3.993983	1,524,213.00	3.993983	92	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	106518.7	3.493333	131,267.00	3.493333	81	50 - 150	0.0000	+/-0.50	
M5PFPeA	717086.6	1.791367	823,921.00	1.791367	87	50 - 150	0.0000	+/-0.50	
M5PFHxA	985207.3	2.672333	1,131,820.00	2.672333	87	50 - 150	0.0000	+/-0.50	
M3PFHxS	130502.1	3.266833	141,124.00	3.266833	92	50 - 150	0.0000	+/-0.50	
M4PFHpA	1036197	3.2357	1,179,935.00	3.2357	88	50 - 150	0.0000	+/-0.50	
M8PFOA	1032541	3.50185	1,119,574.00	3.50185	92	50 - 150	0.0000	+/-0.50	
M8PFOS	145752.8	3.692083	163,358.00	3.692083	89	50 - 150	0.0000	+/-0.50	
M9PFNA	937495.3	3.693117	1,027,621.00	3.693117	91	50 - 150	0.0000	+/-0.50	
MPFDoA	1490703	4.136817	1,594,256.00	4.136817	94	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	268246.1	4.001467	294,893.00	4.001467	91	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	300254.1	3.921883	301,628.00	3.921883	100	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Matrix Spike Dup (B294243-MSD1)			Lab File ID: B294243-MSD1.d			Analyzed: 11/11/21 18:25			
M8FOSA	421729.6	4.044517	451,140.00	4.044517	93	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	162951.5	2.58715	207,338.00	2.58715	79	50 - 150	0.0000	+/-0.50	
M2PFTA	1701513	4.378417	1,799,881.00	4.378417	95	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	198802.1	3.850917	225,194.00	3.850917	88	50 - 150	0.0000	+/-0.50	
MPFBA	693712.6	1.108317	819,390.00	1.108317	85	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	208003.1	2.91295	298,883.00	2.91295	70	50 - 150	0.0000	+/-0.50	
M6PFDA	1115619	3.851417	1,173,486.00	3.851417	95	50 - 150	0.0000	+/-0.50	
M3PFBS	169479.4	1.978033	190,139.00	1.969733	89	50 - 150	0.0083	+/-0.50	
M7PFUnA	1458661	3.993983	1,524,213.00	3.993983	96	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	113873.4	3.493333	131,267.00	3.493333	87	50 - 150	0.0000	+/-0.50	
M5PFPeA	713144.7	1.791367	823,921.00	1.791367	87	50 - 150	0.0000	+/-0.50	
M5PFHxA	978295.6	2.672333	1,131,820.00	2.672333	86	50 - 150	0.0000	+/-0.50	
M3PFHxS	126306.8	3.266833	141,124.00	3.266833	90	50 - 150	0.0000	+/-0.50	
M4PFHpA	1028661	3.2357	1,179,935.00	3.2357	87	50 - 150	0.0000	+/-0.50	
M8PFOA	1046858	3.50185	1,119,574.00	3.50185	94	50 - 150	0.0000	+/-0.50	
M8PFOS	148311.8	3.692083	163,358.00	3.692083	91	50 - 150	0.0000	+/-0.50	
M9PFNA	940114.4	3.693117	1,027,621.00	3.693117	91	50 - 150	0.0000	+/-0.50	
MPFDoA	1453800	4.128783	1,594,256.00	4.136817	91	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	257326.2	4.001467	294,893.00	4.001467	87	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	294620.5	3.921883	301,628.00	3.921883	98	50 - 150	0.0000	+/-0.50	

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S065115-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	423	0.8628989	0.799615		-15.3	30
Perfluorobutanesulfonic acid (PFBS)	A	444	373	0.9900012	0.8887524		-16.1	30
Perfluoropentanoic acid (PFPeA)	A	500	407	0.9353824	0.8334025		-18.5	30
Perfluorohexanoic acid (PFHxA)	A	500	422	0.86678	0.8120918		-15.6	30
11Cl-PF3OUdS (F53B Minor)	A	472	445	1.835659	1.753341		-5.6	30
9Cl-PF3ONS (F53B Major)	A	466	453	3.897292	3.781268		-2.9	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	415	1.602632	1.49088		-12.1	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	403	2.979159	0.1173783		-19.3	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	498	0.7665044	0.8855685		3.7	30
Perfluorodecanoic acid (PFDA)	A	500	417	0.929213	0.8634664		-16.6	30
Perfluorododecanoic acid (PFDoA)	A	500	427	0.9361562	0.8549957		-14.5	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	402	3.93233	3.474057		-9.8	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	534	0.4568315	0.5241968		12.1	30
N-EtFOSAA	A	500	406	0.9836556	0.8064959		-18.9	30
N-MeFOSAA	A	500	422	1.027301	0.9631958		-15.6	30
Perfluorotetradecanoic acid (PFTA)	A	500	468	0.8542676	0.8965934		-6.4	30
Perfluorotridecanoic acid (PFTrDA)	A	500	461	1.009812	1.048253		-7.8	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	446	1.061084	1.109116		-4.8	30
Perfluorodecanesulfonic acid (PFDS)	A	482	462	0.6287667	0.6217433		-4.2	30
Perfluorooctanesulfonamide (FOSA)	A	500	400	0.8334166	0.7355786		-20.0	30
Perfluorononanesulfonic acid (PFNS)	A	481	519	0.319818	0.349107		7.9	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	473	0.3462983	0.3123852		-5.5	30
Perfluoro-1-butanesulfonamide (FBSA)	A	500	447	0.3044628	0.2947673		-10.6	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	418	0.9652933	0.9468037		-8.5	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	480	0.495495	0.4751388		-4.1	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	476	0.5879048	0.5586348		-4.8	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	447	1.004025	1.024852		-6.2	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	391	0.9760894	0.9024041		-16.8	30
Perfluoroundecanoic acid (PFUnA)	A	500	417	0.8528971	0.7808284		-16.6	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	469	0.3237613	0.3070561		-6.1	30
Perfluoroheptanoic acid (PFHpA)	A	500	473	0.9139933	0.8670914		-5.4	30
Perfluorooctanoic acid (PFOA)	A	500	462	0.8653288	0.8024483		-7.7	30
Perfluorooctanesulfonic acid (PFOS)	A	464	458	0.9382121	0.9902376		-1.2	30
Perfluorononanoic acid (PFNA)	A	500	460	0.938444	0.8883012		-8.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S065115-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2330	0.8628989	0.880375		-6.8	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2150	0.9900012	1.027367		-3.0	30
Perfluoropentanoic acid (PFPeA)	A	2500	2270	0.9353824	0.9277113		-9.3	30
Perfluorohexanoic acid (PFHxA)	A	2500	2270	0.86678	0.8744921		-9.2	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2370	1.835659	1.884347		0.6	30
9Cl-PF3ONS (F53B Major)	A	2330	2350	3.897292	3.962634		0.8	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2380	1.602632	1.711559		0.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2160	2.979159	0.1263891		-13.8	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2740	0.7665044	0.961566		14.0	30
Perfluorodecanoic acid (PFDA)	A	2500	2240	0.929213	0.9266368		-10.5	30
Perfluorododecanoic acid (PFDoA)	A	2500	2340	0.9361562	0.9366762		-6.4	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2230	3.93233	3.893405		0.3	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2410	0.4568315	0.4730519		1.1	30
N-EtFOSAA	A	2500	2350	0.9836556	0.9403483		-5.8	30
N-MeFOSAA	A	2500	2310	1.027301	1.054079		-7.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2260	0.8542676	0.8611868		-9.6	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2360	1.009812	1.066181		-5.5	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2390	0.6287667	0.6443868		-0.7	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2470	1.061084	1.213426		5.3	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2210	0.8334166	0.8124679		-11.6	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2460	0.319818	0.3315026		2.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2700	0.3462983	0.3616047		8.0	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2440	0.3044628	0.3211985		-2.6	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2220	0.9652933	1.006942		-2.7	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2640	0.495495	0.5265675		5.6	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2620	0.5879048	0.6201523		5.0	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2470	1.004025	1.119909		3.7	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2140	0.9760894	0.9862956		-9.0	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2550	0.8528971	0.9549437		2.0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2530	0.3237613	0.332383		1.0	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2520	0.9139933	0.931435		0.9	30
Perfluorooctanoic acid (PFOA)	A	2500	2500	0.8653288	0.8759402		-0.01	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2250	0.9382121	0.9700591		-3.2	30
Perfluorononanoic acid (PFNA)	A	2500	2570	0.938444	0.9950557		2.7	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S065115-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2330	0.8628989	0.8811921		-6.7	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2190	0.9900012	1.046099		-1.2	30
Perfluoropentanoic acid (PFPeA)	A	2500	2310	0.9353824	0.9463008		-7.5	30
Perfluorohexanoic acid (PFHxA)	A	2500	2270	0.86678	0.8737316		-9.2	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2590	1.835659	2.060038		9.9	30
9Cl-PF3ONS (F53B Major)	A	2330	2450	3.897292	4.13158		5.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2440	1.602632	1.753723		3.4	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2070	2.979159	0.1215601		-17.0	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2380	0.7665044	0.8377837		-0.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2220	0.929213	0.921425		-11.0	30
Perfluorododecanoic acid (PFDoA)	A	2500	2420	0.9361562	0.9701233		-3.0	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2280	3.93233	3.990996		2.7	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2690	0.4568315	0.5288559		13.0	30
N-EtFOSAA	A	2500	2390	0.9836556	0.9538518		-4.5	30
N-MeFOSAA	A	2500	2270	1.027301	1.035474		-9.3	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2410	0.8542676	0.9187587		-3.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2380	1.009812	1.073788		-4.8	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2510	1.061084	1.236901		7.4	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2600	0.6287667	0.6991961		7.7	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2250	0.8334166	0.828345		-9.9	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2560	0.319818	0.345274		6.7	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2730	0.3462983	0.3651987		9.1	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2430	0.3044628	0.3199283		-2.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2290	0.9652933	1.03915		0.5	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2650	0.495495	0.5295835		6.2	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2610	0.5879048	0.6176661		4.5	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2540	1.004025	1.150603		6.6	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2250	0.9760894	1.038276		-4.2	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2480	0.8528971	0.9276148		-0.9	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2580	0.3237613	0.3401267		3.4	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2430	0.9139933	0.8969026		-2.8	30
Perfluorooctanoic acid (PFOA)	A	2500	2490	0.8653288	0.8719887		-0.5	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2350	0.9382121	1.016093		1.4	30
Perfluorononanoic acid (PFNA)	A	2500	2440	0.938444	0.9463743		-2.3	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S065193-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	430	0.8628989	0.812246		-14.0	30
Perfluorobutanesulfonic acid (PFBS)	A	444	380	0.9900012	0.9057642		-14.5	30
Perfluoropentanoic acid (PFPeA)	A	500	432	0.9353824	0.8845059		-13.5	30
Perfluorohexanoic acid (PFHxA)	A	500	447	0.86678	0.8597585		-10.7	30
11Cl-PF3OUdS (F53B Minor)	A	472	483	1.835659	1.901037		2.3	30
9Cl-PF3ONS (F53B Major)	A	466	425	3.897292	3.547621		-8.9	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	429	1.602632	1.540415		-9.2	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	366	2.979159	0.1066423		-26.7	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	548	0.7665044	0.9752743		14.2	30
Perfluorodecanoic acid (PFDA)	A	500	409	0.929213	0.8479211		-18.1	30
Perfluorododecanoic acid (PFDoA)	A	500	414	0.9361562	0.8288102		-17.2	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	416	3.93233	3.595173		-6.6	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	387	0.4568315	0.380312		-18.7	30
N-EtFOSAA	A	500	419	0.9836556	0.8329432		-16.2	30
N-MeFOSAA	A	500	390	1.027301	0.8896324		-22.1	30
Perfluorotetradecanoic acid (PFTA)	A	500	459	0.8542676	0.8795762		-8.2	30
Perfluorotridecanoic acid (PFTrDA)	A	500	390	1.009812	0.8874929		-21.9	30
Perfluorodecanesulfonic acid (PFDS)	A	482	436	0.6287667	0.5875307		-9.5	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	428	1.061084	1.064296		-8.6	30
Perfluorooctanesulfonamide (FOSA)	A	500	430	0.8334166	0.7903497		-14.0	30
Perfluorononanesulfonic acid (PFNS)	A	481	420	0.319818	0.2827318		-12.6	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	533	0.3462983	0.3522219		6.6	30
Perfluoro-1-butanefulfonamide (FBSA)	A	500	469	0.3044628	0.3092859		-6.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	426	0.9652933	0.9640774		-6.8	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	470	0.495495	0.4660075		-5.9	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	457	0.5879048	0.5364524		-8.6	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	423	1.004025	0.9719038		-11.0	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	365	0.9760894	0.8429797		-22.3	30
Perfluoroundecanoic acid (PFUnA)	A	500	435	0.8528971	0.8148841		-13.0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	480	0.3237613	0.3138713		-4.0	30
Perfluoroheptanoic acid (PFHpA)	A	500	471	0.9139933	0.8638247		-5.8	30
Perfluorooctanoic acid (PFOA)	A	500	475	0.8653288	0.8251183		-5.1	30
Perfluorooctanesulfonic acid (PFOS)	A	464	399	0.9382121	0.8624749		-14.0	30
Perfluorononanoic acid (PFNA)	A	500	446	0.938444	0.8610913		-10.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S065193-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2380	0.8628989	0.8995787		-4.7	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2200	0.9900012	1.047284		-1.1	30
Perfluoropentanoic acid (PFPeA)	A	2500	2390	0.9353824	0.9759035		-4.6	30
Perfluorohexanoic acid (PFHxA)	A	2500	2380	0.86678	0.917677		-4.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2420	1.835659	1.92478		2.7	30
9Cl-PF3ONS (F53B Major)	A	2330	2400	3.897292	4.05115		3.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2310	1.602632	1.663269		-1.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	1960	2.979159	0.1146334		-21.7	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2770	0.7665044	0.9750795		15.6	30
Perfluorodecanoic acid (PFDA)	A	2500	2360	0.929213	0.9788841		-5.5	30
Perfluorododecanoic acid (PFDoA)	A	2500	2320	0.9361562	0.9275358		-7.3	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2270	3.93233	3.969859		2.2	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2390	0.4568315	0.4700091		0.4	30
N-EtFOSAA	A	2500	2280	0.9836556	0.9100714		-8.9	30
N-MeFOSAA	A	2500	2420	1.027301	1.106819		-3.0	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2340	0.8542676	0.8906106		-6.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2380	1.009812	1.075504		-4.6	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2410	1.061084	1.18768		3.1	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2420	0.6287667	0.6530737		0.6	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2470	0.8334166	0.9066466		-1.4	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2500	0.319818	0.3373986		4.3	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2760	0.3462983	0.3693868		10.3	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2520	0.3044628	0.3318331		0.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2270	0.9652933	1.031588		-0.3	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2640	0.495495	0.5265402		5.5	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2620	0.5879048	0.6189643		4.8	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2820	1.004025	1.275926		18.4	30
Perfluoropetanesulfonic acid (PFPeS)	A	2350	2270	0.9760894	1.047715		-3.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2320	0.8528971	0.8702713		-7.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2710	0.3237613	0.3565569		8.3	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2580	0.9139933	0.9528248		3.2	30
Perfluorooctanoic acid (PFOA)	A	2500	2580	0.8653288	0.9045224		3.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2130	0.9382121	0.9216298		-8.1	30
Perfluorononanoic acid (PFNA)	A	2500	2450	0.938444	0.9481167		-2.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S065193-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2360	0.8628989	0.8930858		-5.4	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2190	0.9900012	1.043439		-1.5	30
Perfluoropentanoic acid (PFPeA)	A	2500	2370	0.9353824	0.9702235		-5.1	30
Perfluorohexanoic acid (PFHxA)	A	2500	2350	0.86678	0.9052124		-6.0	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2640	1.835659	2.095784		11.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2650	3.897292	4.473237		13.6	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2260	1.602632	1.624912		-4.2	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2020	2.979159	0.1183483		-19.2	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2720	0.7665044	0.9554875		13.3	30
Perfluorodecanoic acid (PFDA)	A	2500	2100	0.929213	0.8704248		-16.0	30
Perfluorododecanoic acid (PFDoA)	A	2500	2520	0.9361562	1.010519		1.0	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2280	3.93233	3.991677		2.8	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2660	0.4568315	0.5221496		11.6	30
N-EtFOSAA	A	2500	2500	0.9836556	0.9998938		0.08	30
N-MeFOSAA	A	2500	2140	1.027301	0.9761852		-14.5	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2490	0.8542676	0.948065		-0.4	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2520	1.009812	1.135268		0.7	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2610	0.6287667	0.7023388		8.2	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2610	1.061084	1.28163		11.4	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2500	0.8334166	0.9196404		0.05	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2550	0.319818	0.3435179		6.2	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2470	0.3462983	0.3304193		-1.2	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2500	0.3044628	0.3293527		-0.08	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2210	0.9652933	1.000475		-3.3	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2650	0.495495	0.5297108		6.2	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2660	0.5879048	0.6296098		6.5	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2550	1.004025	1.158248		7.3	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2270	0.9760894	1.047941		-3.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2280	0.8528971	0.8541395		-8.8	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2790	0.3237613	0.3680313		11.8	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2590	0.9139933	0.9576801		3.7	30
Perfluorooctanoic acid (PFOA)	A	2500	2580	0.8653288	0.9048242		3.3	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2420	0.9382121	1.046347		4.4	30
Perfluorononanoic acid (PFNA)	A	2500	2460	0.938444	0.9553772		-1.4	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S065193-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2350	0.8628989	0.8860905		-6.2	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2140	0.9900012	1.019276		-3.7	30
Perfluoropentanoic acid (PFPeA)	A	2500	2330	0.9353824	0.9547375		-6.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2350	0.86678	0.903339		-6.2	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2290	1.835659	1.818587		-2.9	30
9Cl-PF3ONS (F53B Major)	A	2330	2320	3.897292	3.918012		-0.3	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2230	1.602632	1.600545		-5.6	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2060	2.979159	0.1205975		-17.7	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2590	0.7665044	0.911715		8.0	30
Perfluorodecanoic acid (PFDA)	A	2500	2280	0.929213	0.9451302		-8.8	30
Perfluorododecanoic acid (PFDoA)	A	2500	2500	0.9361562	0.9999374		-0.06	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2260	3.93233	3.950489		1.7	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2670	0.4568315	0.52528		12.2	30
N-EtFOSAA	A	2500	2310	0.9836556	0.9238697		-7.5	30
N-MeFOSAA	A	2500	2210	1.027301	1.010166		-11.5	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2350	0.8542676	0.8951266		-6.0	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2400	1.009812	1.083532		-3.9	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2470	0.6287667	0.6649487		2.4	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2400	1.061084	1.183794		2.7	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2340	0.8334166	0.8600857		-6.4	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2480	0.319818	0.3345653		3.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2700	0.3462983	0.3611759		7.9	30
Perfluoro-1-butananesulfonamide (FBSA)	A	2500	2520	0.3044628	0.3322971		0.8	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2260	0.9652933	1.026943		-0.7	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2610	0.495495	0.5202772		4.3	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2640	0.5879048	0.6236201		5.5	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2630	1.004025	1.190113		10.3	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2320	0.9760894	1.068538		-1.5	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2670	0.8528971	1.001401		6.9	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2740	0.3237613	0.3604289		9.5	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2520	0.9139933	0.928855		0.7	30
Perfluorooctanoic acid (PFOA)	A	2500	2550	0.8653288	0.8922683		1.8	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2280	0.9382121	0.9834333		-1.9	30
Perfluorononanoic acid (PFNA)	A	2500	2510	0.938444	0.9722193		0.3	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S065193-CCV5

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2350	0.8628989	0.8883123		-5.9	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2230	0.9900012	1.064607		0.5	30
Perfluoropentanoic acid (PFPeA)	A	2500	2340	0.9353824	0.9563209		-6.5	30
Perfluorohexanoic acid (PFHxA)	A	2500	2320	0.86678	0.8914917		-7.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2450	1.835659	1.945374		3.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2340	3.897292	3.954361		0.6	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2360	1.602632	1.696537		0.02	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	1920	2.979159	0.1121971		-23.4	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	3130	0.7665044	1.099453		30.6	30 *
Perfluorodecanoic acid (PFDA)	A	2500	2160	0.929213	0.894415		-13.6	30
Perfluorododecanoic acid (PFDoA)	A	2500	2350	0.9361562	0.9402406		-6.0	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2260	3.93233	3.952277		1.8	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2630	0.4568315	0.5165034		10.4	30
N-EtFOSAA	A	2500	2370	0.9836556	0.9454209		-5.3	30
N-MeFOSAA	A	2500	2280	1.027301	1.04137		-8.8	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2430	0.8542676	0.9234345		-3.0	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2480	1.009812	1.119939		-0.7	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2440	0.6287667	0.6575115		1.3	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2600	1.061084	1.276981		10.9	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2360	0.8334166	0.8681399		-5.5	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2400	0.319818	0.3233953		-0.06	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2770	0.3462983	0.3716528		11.0	30
Perfluoro-1-butananesulfonamide (FBSA)	A	2500	2420	0.3044628	0.3192537		-3.1	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2270	0.9652933	1.03158		-0.3	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2670	0.495495	0.5332471		6.9	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2640	0.5879048	0.6247573		5.7	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2520	1.004025	1.14429		6.0	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2290	0.9760894	1.058119		-2.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2540	0.8528971	0.9504971		1.5	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2720	0.3237613	0.3575407		8.6	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2530	0.9139933	0.9357188		1.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2670	0.8653288	0.9372367		6.9	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	0.9382121	0.9765217		-2.6	30
Perfluorononanoic acid (PFNA)	A	2500	2340	0.938444	0.9075274		-6.3	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065289-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	449	0.8628989	0.848643		-10.1	30
Perfluorobutanesulfonic acid (PFBS)	A	444	424	0.9900012	1.012017		-4.4	30
Perfluoropentanoic acid (PFPeA)	A	500	432	0.9353824	0.8837209		-13.6	30
Perfluorohexanoic acid (PFHxA)	A	500	438	0.86678	0.8432275		-12.4	30
11Cl-PF3OUdS (F53B Minor)	A	472	448	1.835659	1.763132		-5.1	30
9Cl-PF3ONS (F53B Major)	A	466	509	3.897292	4.256666		9.3	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	428	1.602632	1.537735		-9.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	501	2.979159	0.1459983		0.3	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	455	0.7665044	0.8104586		-5.1	30
Perfluorodecanoic acid (PFDA)	A	500	436	0.929213	0.9038259		-12.7	30
Perfluorododecanoic acid (PFDoA)	A	500	423	0.9361562	0.8459062		-15.5	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	429	3.93233	3.7137		-3.6	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	525	0.4568315	0.5157542		10.3	30
N-EtFOSAA	A	500	414	0.9836556	0.822905		-17.2	30
N-MeFOSAA	A	500	444	1.027301	1.01487		-11.1	30
Perfluorotetradecanoic acid (PFTA)	A	500	483	0.8542676	0.926149		-3.3	30
Perfluorotridecanoic acid (PFTrDA)	A	500	479	1.009812	1.088363		-4.2	30
Perfluorodecanesulfonic acid (PFDS)	A	482	463	0.6287667	0.6234222		-4.0	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	448	1.061084	1.115432		-4.2	30
Perfluorooctanesulfonamide (FOSA)	A	500	457	0.8334166	0.8407193		-8.5	30
Perfluorononanesulfonic acid (PFNS)	A	481	444	0.319818	0.2987955		-7.7	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	493	0.3462983	0.3256941		-1.4	30
Perfluoro-1-butanefulfonamide (FBSA)	A	500	438	0.3044628	0.2885749		-12.5	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	423	0.9652933	0.9566208		-7.5	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	490	0.495495	0.4850967		-2.1	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	485	0.5879048	0.5688902		-3.1	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	451	1.004025	1.034616		-5.3	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	416	0.9760894	0.9592807		-11.5	30
Perfluoroundecanoic acid (PFUnA)	A	500	435	0.8528971	0.8151328		-13.0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	475	0.3237613	0.3108248		-5.0	30
Perfluoroheptanoic acid (PFHpA)	A	500	495	0.9139933	0.9084594		-0.9	30
Perfluorooctanoic acid (PFOA)	A	500	526	0.8653288	0.9136823		5.1	30
Perfluorooctanesulfonic acid (PFOS)	A	464	450	0.9382121	0.9715991		-3.1	30
Perfluorononanoic acid (PFNA)	A	500	473	0.938444	0.9137429		-5.3	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065289-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2290	0.8628989	0.863806		-8.5	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2140	0.9900012	1.019355		-3.7	30
Perfluoropentanoic acid (PFPeA)	A	2500	2290	0.9353824	0.9388056		-8.2	30
Perfluorohexanoic acid (PFHxA)	A	2500	2280	0.86678	0.8783137		-8.8	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2530	1.835659	2.012635		7.4	30
9Cl-PF3ONS (F53B Major)	A	2330	2410	3.897292	4.074062		3.6	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2150	1.602632	1.548259		-8.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2340	2.979159	0.1374249		-6.3	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2540	0.7665044	0.8945817		5.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2310	0.929213	0.9580796		-7.5	30
Perfluorododecanoic acid (PFDoA)	A	2500	2360	0.9361562	0.9462964		-5.4	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2190	3.93233	3.823468		-1.5	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2540	0.4568315	0.4985244		6.5	30
N-EtFOSAA	A	2500	2390	0.9836556	0.9566018		-4.2	30
N-MeFOSAA	A	2500	2390	1.027301	1.090917		-4.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2340	0.8542676	0.8924961		-6.3	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2250	1.009812	1.01365		-10.2	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2350	1.061084	1.15856		0.5	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2270	0.6287667	0.6114191		-5.8	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2230	0.8334166	0.8180547		-11.0	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2590	0.319818	0.348836		7.8	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2530	0.3462983	0.3378905		1.0	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2380	0.3044628	0.3142952		-4.6	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2180	0.9652933	0.9911336		-4.2	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2530	0.495495	0.5045233		1.2	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2500	0.5879048	0.5914126		0.1	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2260	1.004025	1.025661		-5.1	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2200	0.9760894	1.014011		-6.5	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2390	0.8528971	0.8963776		-4.3	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2620	0.3237613	0.3442339		4.6	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2390	0.9139933	0.8831702		-4.3	30
Perfluorooctanoic acid (PFOA)	A	2500	2500	0.8653288	0.874566		-0.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	0.9382121	0.9755663		-2.7	30
Perfluorononanoic acid (PFNA)	A	2500	2420	0.938444	0.9364634		-3.3	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065289-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2270	0.8628989	0.856434		-9.3	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2120	0.9900012	1.013431		-4.3	30
Perfluoropentanoic acid (PFPeA)	A	2500	2290	0.9353824	0.9362058		-8.5	30
Perfluorohexanoic acid (PFHxA)	A	2500	2220	0.86678	0.8548739		-11.2	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2420	1.835659	1.919291		2.5	30
9Cl-PF3ONS (F53B Major)	A	2330	2370	3.897292	4.004019		1.9	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2200	1.602632	1.582027		-6.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2600	2.979159	0.1530011		4.2	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2690	0.7665044	0.9467494		12.2	30
Perfluorodecanoic acid (PFDA)	A	2500	2210	0.929213	0.9150245		-11.7	30
Perfluorododecanoic acid (PFDoA)	A	2500	2440	0.9361562	0.976304		-2.4	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2220	3.93233	3.892119		0.2	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2390	0.4568315	0.4702348		0.5	30
N-EtFOSAA	A	2500	2320	0.9836556	0.927518		-7.1	30
N-MeFOSAA	A	2500	2290	1.027301	1.045711		-8.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2220	0.8542676	0.8457152		-11.2	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2310	1.009812	1.044484		-7.4	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2360	1.061084	1.160987		0.7	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2640	0.6287667	0.710088		9.4	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2300	0.8334166	0.8452991		-8.0	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2550	0.319818	0.3434393		6.1	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2620	0.3462983	0.350322		4.7	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2270	0.3044628	0.2998627		-9.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2180	0.9652933	0.9886059		-4.4	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2530	0.495495	0.505185		1.3	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2510	0.5879048	0.592379		0.3	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2400	1.004025	1.089214		0.8	30
Perfluoropetanesulfonic acid (PFPeS)	A	2350	2140	0.9760894	0.9880537		-8.9	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2300	0.8528971	0.8615246		-8.0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2530	0.3237613	0.3325934		1.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2420	0.9139933	0.8913065		-3.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2430	0.8653288	0.8499918		-2.9	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2200	0.9382121	0.9488362		-5.3	30
Perfluorononanoic acid (PFNA)	A	2500	2370	0.938444	0.9197828		-5.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-466 PFAS

S065289-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2280	0.8628989	0.8625491		-8.7	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2120	0.9900012	1.00905		-4.7	30
Perfluoropentanoic acid (PFPeA)	A	2500	2290	0.9353824	0.9379711		-8.3	30
Perfluorohexanoic acid (PFHxA)	A	2500	2210	0.86678	0.8520138		-11.5	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2400	1.835659	1.904212		1.7	30
9Cl-PF3ONS (F53B Major)	A	2330	2380	3.897292	4.013		2.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2140	1.602632	1.53532		-9.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2780	2.979159	0.1635565		11.3	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2590	0.7665044	0.9125281		8.1	30
Perfluorodecanoic acid (PFDA)	A	2500	2110	0.929213	0.8723579		-15.8	30
Perfluorododecanoic acid (PFDoA)	A	2500	2230	0.9361562	0.8942915		-10.6	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2190	3.93233	3.834224		-1.3	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2430	0.4568315	0.4770988		1.9	30
N-EtFOSAA	A	2500	2300	0.9836556	0.9196938		-7.9	30
N-MeFOSAA	A	2500	2090	1.027301	0.9521895		-16.6	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2270	0.8542676	0.8635308		-9.3	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2250	1.009812	1.01419		-10.1	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2360	0.6287667	0.6358177		-2.0	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2350	1.061084	1.159187		0.6	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2240	0.8334166	0.8219908		-10.6	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2340	0.319818	0.3153515		-2.5	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2560	0.3462983	0.3428804		2.5	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2270	0.3044628	0.2995956		-9.1	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2220	0.9652933	1.009149		-2.4	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2550	0.495495	0.5080059		1.9	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2500	0.5879048	0.5896747		-0.2	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2330	1.004025	1.055994		-2.3	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2180	0.9760894	1.008107		-7.0	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2240	0.8528971	0.8376818		-10.5	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2540	0.3237613	0.3341734		1.6	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2420	0.9139933	0.8912517		-3.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2460	0.8653288	0.8634762		-1.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2230	0.9382121	0.9624081		-4.0	30
Perfluorononanoic acid (PFNA)	A	2500	2420	0.938444	0.9379926		-3.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SOP-454 PFAS in Water	
Perfluorobutanoic acid (PFBA)	NH-P
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluoropentanoic acid (PFPeA)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
11Cl-PF3OUdS (F53B Minor)	NH-P
9Cl-PF3ONS (F53B Major)	NH-P
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P
8:2 Fluorotelomersulfonic acid (8:2FTS A)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	NH-P
Perfluoroheptanesulfonic acid (PFHpS)	NH-P
N-EtFOSAA	NH-P
N-MeFOSAA	NH-P
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
4:2 Fluorotelomersulfonic acid (4:2FTS A)	NH-P
Perfluorodecanesulfonic acid (PFDS)	NH-P
Perfluorooctanesulfonamide (FOSA)	NH-P
Perfluorononanesulfonic acid (PFNS)	NH-P
Perfluoro-1-hexanesulfonamide (FHxSA)	NH-P
Perfluoro-1-butanefulfonamide (FBSA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
Perfluoro-4-oxapentanoic acid (PFMPA)	NH-P
Perfluoro-5-oxahexanoic acid (PFMBA)	NH-P
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P
Perfluoropetanesulfonic acid (PFPeS)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P
SOP-466 PFAS in Soil	
Perfluorobutanoic acid (PFBA)	NH-P
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluoropentanoic acid (PFPeA)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
11Cl-PF3OUdS (F53B Minor)	NH-P
9Cl-PF3ONS (F53B Major)	NH-P
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P
8:2 Fluorotelomersulfonic acid (8:2FTS A)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SOP-466 PFAS in Soil</i>	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	NH-P
Perfluoroheptanesulfonic acid (PFHpS)	NH-P
N-EtFOSAA	NH-P
N-MeFOSAA	NH-P
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
4:2 Fluorotelomersulfonic acid (4:2FTS A)	NH-P
Perfluorodecanesulfonic acid (PFDS)	NH-P
Perfluorooctanesulfonamide (FOSA)	NH-P
Perfluorononanesulfonic acid (PFNS)	NH-P
Perfluoro-1-hexanesulfonamide (FHxSA)	NH-P
Perfluoro-1-butanefulfonamide (FBSA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
Perfluoro-4-oxapentanoic acid (PFMPA)	NH-P
Perfluoro-5-oxahexanoic acid (PFMBA)	NH-P
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P
Perfluoropetanesulfonic acid (PFPeS)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

Pace Analytical
 Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
 Tighe & Bond
 120 Front Street, Worcester, MA 01610
 Phone: 508-754-2201
 Princeton Soil Sampling - 22 Mountain
 Project Location: Princeton, MA
 Project Number: P-0534017
 Project Manager: Jeff Arps/Michael Scherer
 Pace Analytical Quote Name/Number
 Invoice Recipient: Tighe & Bond
 Sampled By: M Scherer

1800 Elm Street SE
 Minneapolis, MN 55414

CHAIN OF CUSTODY RECORD

Requested Turnaround Time
 7-Day
 10-Day
 PFAS 10-Day (std)
 3-Day
 4-Day
 1-Day
 2-Day
 Field Filtered
 Lab to Filter
 Field Filtered
 Lab to Filter
 Format: PDF EXCEL
 Other: SOXHLET
 CLP Like Data Pkg Required:
 Email To: mjscherer@tighebond.com
 Fax To #:

Pace Analytical Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
1	22MTN S-1 (6-12)	10/27/21	08:00	GRAB	S	U	1				
2	22MTN S-1 (12-24)		08:00				/				
3	22MTN S-3 (6-12)		08:30				/				
4	22MTN S-4 (6-12)		08:50				/				
5	22MTN S-4 (12-18)		08:50				/				
6	22MTN S-5 (6-12)		09:00				/				
7	22MTN S-5 (12-18)		09:00				/				
8	22MTN S-6 (6-12)		09:30				/				
9	22MTN S-7 (6-12)		10:00				/				
10	22MTN S-8 (6-12)		10:30				/				
11	22MTN S-8 (12-18)		10:30				/				
12	22MTN S-10 (0-6)		11:00				/				
13	22MTN S-11 (0-12)		11:30				/				

Relinquished by: (signature) [Signature]
 Date/Time: 10/29/21 12:00
 Received by: (signature) [Signature]
 Date/Time: 10/29/21 18:15
 Relinquished by: (signature) [Signature]
 Date/Time: 10/29/21 2:03 PM
 Received by: (signature) [Signature]
 Date/Time: 10/29/21 10:49 AM
 Relinquished by: (signature) [Signature]
 Date/Time: []
 Received by: (signature) [Signature]
 Date/Time: []
 Relinquished by: (signature) [Signature]
 Date/Time: []
 Received by: (signature) [Signature]
 Date/Time: []

Client Comments:
 MA RCP Required
 MA RCP Certification Form Required
 CT RCP Required
 RCP Certification Form Required
 MA State DW Required
 PWSD #

Project Entity	Government	Federal	City	Municipality	21 J	Brownfield	MWRA	School	AMBA	WRTA	Other
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Special Requirements
 MA RCP Required
 MA RCP Certification Form Required
 CT RCP Required
 RCP Certification Form Required
 MA State DW Required
 PWSD #

Project Entity
 Government
 Federal
 City
 Municipality
 21 J
 Brownfield
 MWRA
 School
 AMBA
 WRTA
 Other
 Chromatogram
 AIHA-LAP, LLC

NEIAC and AIHA-LAP, LLC Accredited

MA RCP Required
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 CT RCP Required
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 City
 Municipality
 21 J
 Brownfield
 MWRA
 School
 AMBA
 WRTA
 Other
 Chromatogram
 AIHA-LAP, LLC

NEIAC and AIHA-LAP, LLC Accredited

ANALYSIS REQUESTED

Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
GW						
DW						
A						
S						
SL						
SOL						
O						

*Pace Analytical is not responsible for missing samples from prepacked coolers

*Matrix Codes:
 GW = Ground Water
 DW = Waste Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

*Preservation Codes:
 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
 H - High; M - Medium; L - Low; C - Clean; U - Unknown

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T & B
 Received By MA Date 10/29/11 Time 2035
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 3.0
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? MA Were Samples Tampered with? MA
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? MA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? RT On COC? RT
 Do all samples have the proper pH? MA Acid _____ Base _____

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

[Empty box for comments]

Tighe&Bond

APPENDIX F

TABLE 3
PFAS Surface Water Summary
Princeton, Massachusetts
RTN 2-21072

Parameter	Surface Water Quality Criteria	30 Mountain Road Runoff				Schoolhouse Pond		Airport Pond	
		2/27/2020	4/22/2021	7/12/2021	10/27/2021	10/18/2021		10/18/2021	
Sampling Date						Shallow	Deep	Shallow	Deep
PFAS (µg/L)									
Perfluorobutanoic acid (PFBA)		-	-	0.016	ND (0.002)	0.0044	0.0047	ND (0.0019)	ND (0.002)
Perfluorobutanesulfonic acid (PFBS)		0.058	0.02	0.042	0.031	0.0061	0.0066	ND (0.0019)	ND (0.002)
Perfluoropentanoic acid (PFPeA)		-	-	0.019	0.0052	0.0043	0.0039	0.0012	0.0024
Perfluorohexanoic acid (PFHxA)		0.088	0.024	0.04	0.024	0.0037	0.0039	ND (0.0019)	ND (0.002)
11Cl-PF3OUdS (F53B Minor)		-	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0019)	ND (0.002)	ND (0.0019)	ND (0.002)
9Cl-PF3ONS (F53B Major)		-	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0019)	ND (0.002)	ND (0.0019)	ND (0.002)
4,8-dioxa-3H-perfluorononanoic acid (ADONA)		-	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0019)	ND (0.002)	ND (0.0019)	ND (0.002)
Hexafluoropropylene oxide dimer acid (HFPO-DA)		-	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0019)	ND (0.002)	ND (0.0019)	ND (0.002)
8:2 Fluorotelomersulfonic acid (8:2FTS A)		-	-	ND (0.002)	ND (0.002)	ND (0.0019)	ND (0.002)	ND (0.0019)	ND (0.002)
Perfluorododecanoic acid (PFDoA)		ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0019)	ND (0.002)	ND (0.0019)	ND (0.002)
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)		-	-	ND (0.002)	ND (0.002)	ND (0.0019)	ND (0.002)	ND (0.0019)	ND (0.002)
Perfluoroheptanesulfonic acid (PFHpS)		-	-	0.043	0.025	ND (0.0019)	0.0011	ND (0.0019)	ND (0.002)
N-EtFOSAA		0.0031	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0019)	ND (0.002)	ND (0.0019)	ND (0.002)
N-MeFOSAA		0.0039	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0019)	ND (0.002)	ND (0.0019)	ND (0.002)
Perfluorotetradecanoic acid (PFTA)		ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0019)	ND (0.002)	ND (0.0019)	ND (0.002)
Perfluorotridecanoic acid (PFTDA)		ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0019)	ND (0.002)	ND (0.0019)	ND (0.002)
4:2 Fluorotelomersulfonic acid (4:2FTS A)		-	-	ND (0.002)	ND (0.002)	ND (0.0019)	ND (0.002)	ND (0.0019)	ND (0.002)
Perfluorodecanesulfonic acid (PFDS)		-	-	ND (0.002)	ND (0.002)	ND (0.0019)	ND (0.002)	ND (0.0019)	ND (0.002)
Perfluorooctanesulfonamide (FOSA)		-	-	0.0025	ND (0.002)	ND (0.0019)	ND (0.002)	ND (0.0019)	ND (0.002)
Perfluorononanesulfonic acid (PFNS)		-	-	ND (0.002)	ND (0.002)	ND (0.0019)	ND (0.002)	ND (0.0019)	ND (0.002)
Perfluoro-1-hexanesulfonamide (FHxSA)		-	-	0.036	0.048	ND (0.0019)	ND (0.002)	ND (0.0019)	ND (0.002)
Perfluoro-1-butanesulfonamide (FBSA)		-	-	0.012	0.0095	0.00037	0.00038	ND (0.0019)	ND (0.002)
Perfluoro-4-oxapentanoic acid (PFMPA)		-	-	ND (0.002)	ND (0.002)	ND (0.0019)	ND (0.002)	ND (0.0019)	ND (0.002)
Perfluoro-5-oxahexanoic acid (PFMBA)		-	-	ND (0.002)	ND (0.002)	ND (0.0019)	ND (0.002)	ND (0.0019)	ND (0.002)
6:2 Fluorotelomersulfonic acid (6:2FTS A)		-	-	ND (0.002)	ND (0.002)	ND (0.0019)	ND (0.002)	ND (0.0019)	ND (0.002)
Perfluoropentanesulfonic acid (PFPeS)		-	-	0.053	0.031	0.0056	0.0059	ND (0.0019)	ND (0.002)
Perfluoroundecanoic acid (PFUnA)		ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0019)	ND (0.002)	ND (0.0019)	ND (0.002)
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)		-	-	ND (0.002)	ND (0.002)	ND (0.0019)	ND (0.002)	ND (0.0019)	ND (0.002)
Perfluoroheptanoic acid (PFHpA)	1705	0.023	0.0062	0.016	0.0083	0.0024	0.0021	0.00047	0.00066
Perfluorooctanoic acid (PFOA)	1705	0.1	0.032	0.048	0.027	0.0066	0.0065	0.00098	0.0011
Perfluorooctanesulfonic acid (PFOS)	19	2.8	2.1	2.0	1.1	0.0097	0.011	0.00097	0.0024
Perfluorodecanoic acid (PFDA)	1705	0.0062	0.0022	0.0024	0.0024	ND (0.0019)	ND (0.002)	ND (0.0019)	ND (0.002)
Perfluorononanoic acid (PFNA)	1705	0.0031	ND (0.002)	0.0039	ND (0.002)	0.0007	0.00064	ND (0.0019)	ND (0.002)
Perfluorohexanesulfonic acid (PFHxS)	19	0.71	0.35	0.62	0.43	0.043	0.045	ND (0.0019)	ND (0.002)
Drinking Water Standard (PFAS6)	0.020	3.642	2.490	2.690	1.568	0.062	0.065	0.002	0.004

NOTES:

- = indicates that the compound was not analyzed
 ND = Not detected above the lab reporting limits shown in parentheses.
 Bolded values exceed the proposed Method 1 Standard

Surface Water Quality Criteria Reference

Minnesota Pollution Control Agency Surface Water Quality Criterion for Perfluorooctanoic Acid - <https://www.pca.state.mn.us/sites/default/files/pfoa-report.pdf>
 Minnesota Pollution Control Agency Surface Water Quality Criterion for Perfluorooctane Sulfonic Acid - <https://www.pca.state.mn.us/sites/default/files/pfos-report.pdf>
 Minnesota Pollution Control Agency Surface Water Quality Criterion for Perfluorooctanoic Acid - <https://www.pca.state.mn.us/sites/default/files/pfoa-report.pdf>
 Minnesota Pollution Control Agency Surface Water Quality Criterion for Perfluorooctane Sulfonic Acid - <https://www.pca.state.mn.us/sites/default/files/pfos-report.pdf>
 Minnesota Pollution Control Agency Surface Water Quality Criterion for Perfluorooctanoic Acid - <https://www.pca.state.mn.us/sites/default/files/pfoa-report.pdf>

November 3, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

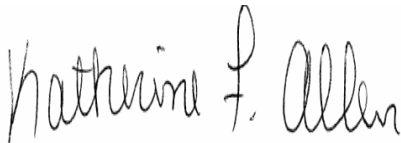
Project Location: Airport Pond, Worcester, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1050

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 11/3/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1050

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Airport Pond, Worcester, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
Airport Pond Shallow	21J1050-01	Drinking Water		SOP-454 PFAS	
Airport Pond Deep	21J1050-02	Drinking Water		SOP-454 PFAS	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SOP-454 PFAS

Qualifications:

Duplicate analysis confirmed Extracted Internal Standard failure due to matrix effects. Original results reported.

Analyte & Samples(s) Qualified:

M2PFTA, M7PFUnA, M8FOSA, MPFD_oA

21J1050-01[Airport Pond Shallow], 21J1050-02[Airport Pond Deep]

Extracted Internal Standard is outside of control limits.

Analyte & Samples(s) Qualified:

MPFBA

B293284-BSD1

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Technical Representative

Project Location: Airport Pond, Worcester, MA

Sample Description:

Work Order: 21J1050

Date Received: 10/19/2021

Field Sample #: Airport Pond Shallow

Sampled: 10/18/2021 12:00

Sample ID: 21J1050-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL		Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
			MA	ORSG						
Perfluorobutanoic acid (PFBA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluoropentanoic acid (PFPeA)	1.2	1.9		ng/L	1	J	SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
N-EtFOSAA	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
N-MeFOSAA	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluorooctanesulfonamide (FOSA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluorononanesulfonic acid (PFNS)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluoroheptanoic acid (PFHpA)	0.47	1.9		ng/L	1	J	SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluorooctanoic acid (PFOA)	0.98	1.9		ng/L	1	J	SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluorooctanesulfonic acid (PFOS)	0.97	1.9		ng/L	1	J	SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 19:59	BLH

Project Location: Airport Pond, Worcester, MA

Sample Description:

Work Order: 21J1050

Date Received: 10/19/2021

Field Sample #: Airport Pond Deep

Sampled: 10/18/2021 12:00

Sample ID: 21J1050-02

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date	Date/Time	Analyst
		RL	MA ORSG					Prepared	Analyzed	
Perfluorobutanoic acid (PFBA)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Perfluoropentanoic acid (PFPeA)	2.4	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Perfluorohexanoic acid (PFHxA)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
11Cl-PF3OUdS (F53B Minor)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
9Cl-PF3ONS (F53B Major)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Perfluorodecanoic acid (PFDA)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Perfluorododecanoic acid (PFDoA)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
N-EtFOSAA	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
N-MeFOSAA	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Perfluorotetradecanoic acid (PFTA)	ND	2.0		ng/L	1		SOP-454 PFAS	11/1/21	11/2/21 22:42	JFC
Perfluorotridecanoic acid (PFTTrDA)	ND	2.0		ng/L	1		SOP-454 PFAS	11/1/21	11/2/21 22:42	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Perfluorooctanesulfonamide (FOSA)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Perfluorononanesulfonic acid (PFNS)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Perfluoroundecanoic acid (PFUnA)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Perfluoroheptanoic acid (PFHpA)	0.66	2.0		ng/L	1	J	SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Perfluorooctanoic acid (PFOA)	1.1	2.0		ng/L	1	J	SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Perfluorooctanesulfonic acid (PFOS)	2.4	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH
Perfluorononanoic acid (PFNA)	ND	2.0		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:07	BLH

Sample Extraction Data

Prep Method: SOP 454-PFAAS-SOP-454 PFAS

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1050-01 [Airport Pond Shallow]	B293284	260	1.00	10/27/21
21J1050-02 [Airport Pond Deep]	B293284	252	1.00	10/27/21

Prep Method: SOP 454-PFAAS-SOP-454 PFAS

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1050-02RE1 [Airport Pond Deep]	B293592	245	1.00	11/01/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B293284 - SOP 454-PFAAS

Blank (B293284-BLK1)

Prepared: 10/27/21 Analyzed: 10/28/21

Perfluorobutanoic acid (PFBA)	ND	2.1	ng/L
Perfluorobutanesulfonic acid (PFBS)	ND	2.1	ng/L
Perfluoropentanoic acid (PFPeA)	ND	2.1	ng/L
Perfluorohexanoic acid (PFHxA)	ND	2.1	ng/L
11Cl-PF3OUdS (F53B Minor)	ND	2.1	ng/L
9Cl-PF3ONS (F53B Major)	ND	2.1	ng/L
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.1	ng/L
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.1	ng/L
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.1	ng/L
Perfluorodecanoic acid (PFDA)	ND	2.1	ng/L
Perfluorododecanoic acid (PFDoA)	ND	2.1	ng/L
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	2.1	ng/L
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.1	ng/L
N-EtFOSAA	ND	2.1	ng/L
N-MeFOSAA	ND	2.1	ng/L
Perfluorotetradecanoic acid (PFTA)	ND	2.1	ng/L
Perfluorotridecanoic acid (PFTrDA)	ND	2.1	ng/L
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.1	ng/L
Perfluorodecanesulfonic acid (PFDS)	ND	2.1	ng/L
Perfluorooctanesulfonamide (FOSA)	ND	2.1	ng/L
Perfluorononanesulfonic acid (PFNS)	ND	2.1	ng/L
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.1	ng/L
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.1	ng/L
Perfluorohexanesulfonic acid (PFHxS)	ND	2.1	ng/L
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.1	ng/L
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.1	ng/L
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.1	ng/L
Perfluoropentanesulfonic acid (PFPeS)	ND	2.1	ng/L
Perfluoroundecanoic acid (PFUnA)	ND	2.1	ng/L
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.1	ng/L
Perfluoroheptanoic acid (PFHpA)	ND	2.1	ng/L
Perfluorooctanoic acid (PFOA)	ND	2.1	ng/L
Perfluorooctanesulfonic acid (PFOS)	ND	2.1	ng/L
Perfluorononanoic acid (PFNA)	ND	2.1	ng/L

LCS (B293284-BS1)

Prepared: 10/27/21 Analyzed: 10/28/21

Perfluorobutanoic acid (PFBA)	8.61	1.9	ng/L	9.73	88.5	73-129
Perfluorobutanesulfonic acid (PFBS)	7.99	1.9	ng/L	8.61	92.8	72-130
Perfluoropentanoic acid (PFPeA)	8.72	1.9	ng/L	9.73	89.6	72-129
Perfluorohexanoic acid (PFHxA)	8.67	1.9	ng/L	9.73	89.1	72-129
11Cl-PF3OUdS (F53B Minor)	7.72	1.9	ng/L	9.17	84.2	50-150
9Cl-PF3ONS (F53B Major)	7.60	1.9	ng/L	9.07	83.8	50-150
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	7.16	1.9	ng/L	9.17	78.1	50-150
Hexafluoropropylene oxide dimer acid (HFPO-DA)	7.78	1.9	ng/L	9.73	80.0	50-150
8:2 Fluorotelomersulfonic acid (8:2FTS A)	8.67	1.9	ng/L	9.34	92.8	67-138
Perfluorodecanoic acid (PFDA)	8.56	1.9	ng/L	9.73	87.9	71-129
Perfluorododecanoic acid (PFDoA)	9.05	1.9	ng/L	9.73	93.0	72-134
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	7.52	1.9	ng/L	8.66	86.8	50-150

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B293284 - SOP 454-PFAAS

LCS (B293284-BS1)

Prepared: 10/27/21 Analyzed: 10/28/21

Perfluoroheptanesulfonic acid (PFHpS)	9.13	1.9	ng/L	9.29		98.3	69-134			
N-EtFOSAA	10.9	1.9	ng/L	9.73		112	61-135			
N-MeFOSAA	10.6	1.9	ng/L	9.73		109	65-136			
Perfluorotetradecanoic acid (PFTA)	8.36	1.9	ng/L	9.73		85.9	71-132			
Perfluorotridecanoic acid (PFTTrDA)	8.99	1.9	ng/L	9.73		92.4	65-144			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	8.59	1.9	ng/L	9.10		94.5	63-143			
Perfluorodecanesulfonic acid (PFDS)	7.57	1.9	ng/L	9.39		80.6	53-142			
Perfluorooctanesulfonamide (FOSA)	8.39	1.9	ng/L	9.73		86.2	67-137			
Perfluorononanesulfonic acid (PFNS)	9.61	1.9	ng/L	9.34		103	69-127			
Perfluoro-1-hexanesulfonamide (FHxSA)	8.42	1.9	ng/L	9.73		86.6	50-150			
Perfluoro-1-butanesulfonamide (FBSA)	8.32	1.9	ng/L	9.73		85.5	50-150			
Perfluorohexanesulfonic acid (PFHxS)	8.42	1.9	ng/L	8.85		95.1	68-131			
Perfluoro-4-oxapentanoic acid (PFMPA)	7.83	1.9	ng/L	9.73		80.4	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	8.16	1.9	ng/L	9.73		83.8	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	8.83	1.9	ng/L	9.24		95.5	64-140			
Perfluoropetanesulfonic acid (PFPeS)	8.79	1.9	ng/L	9.15		96.1	71-127			
Perfluoroundecanoic acid (PFUnA)	8.63	1.9	ng/L	9.73		88.7	69-133			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	8.65	1.9	ng/L	9.73		88.9	50-150			
Perfluoroheptanoic acid (PFHpA)	8.21	1.9	ng/L	9.73		84.3	72-130			
Perfluorooctanoic acid (PFOA)	8.82	1.9	ng/L	9.73		90.6	71-133			
Perfluorooctanesulfonic acid (PFOS)	8.66	1.9	ng/L	9.00		96.2	65-140			
Perfluorononanoic acid (PFNA)	8.56	1.9	ng/L	9.73		87.9	69-130			

LCS Dup (B293284-BS1)

Prepared: 10/27/21 Analyzed: 10/28/21

Perfluorobutanoic acid (PFBA)	8.65	2.0	ng/L	10.0		86.1	73-129	0.444	30	
Perfluorobutanesulfonic acid (PFBS)	8.02	2.0	ng/L	8.89		90.2	72-130	0.400	30	
Perfluoropentanoic acid (PFPeA)	8.84	2.0	ng/L	10.0		88.0	72-129	1.30	30	
Perfluorohexanoic acid (PFHxA)	8.75	2.0	ng/L	10.0		87.1	72-129	0.893	30	
11Cl-PF3OUdS (F53B Minor)	8.49	2.0	ng/L	9.46		89.8	50-150	9.60	30	
9Cl-PF3ONS (F53B Major)	7.57	2.0	ng/L	9.36		80.8	50-150	0.387	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	6.96	2.0	ng/L	9.46		73.5	50-150	2.89	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	8.55	2.0	ng/L	10.0		85.1	50-150	9.37	30	
8:2 Fluorotelomersulfonic acid (8:2FTS A)	8.24	2.0	ng/L	9.64		85.5	67-138	5.07	30	
Perfluorodecanoic acid (PFDA)	8.40	2.0	ng/L	10.0		83.6	71-129	1.92	30	
Perfluorododecanoic acid (PFDoA)	9.14	2.0	ng/L	10.0		91.0	72-134	1.04	30	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	7.48	2.0	ng/L	8.94		83.6	50-150	0.547	30	
Perfluoroheptanesulfonic acid (PFHpS)	9.21	2.0	ng/L	9.59		96.0	69-134	0.855	30	
N-EtFOSAA	10.3	2.0	ng/L	10.0		102	61-135	5.81	30	
N-MeFOSAA	11.4	2.0	ng/L	10.0		114	65-136	7.24	30	
Perfluorotetradecanoic acid (PFTA)	8.01	2.0	ng/L	10.0		79.8	71-132	4.26	30	
Perfluorotridecanoic acid (PFTTrDA)	8.54	2.0	ng/L	10.0		85.0	65-144	5.08	30	
4:2 Fluorotelomersulfonic acid (4:2FTS A)	8.68	2.0	ng/L	9.39		92.4	63-143	0.962	30	
Perfluorodecanesulfonic acid (PFDS)	7.76	2.0	ng/L	9.69		80.0	53-142	2.45	30	
Perfluorooctanesulfonamide (FOSA)	8.98	2.0	ng/L	10.0		89.4	67-137	6.86	30	
Perfluorononanesulfonic acid (PFNS)	9.33	2.0	ng/L	9.64		96.8	69-127	2.93	30	
Perfluoro-1-hexanesulfonamide (FHxSA)	7.83	2.0	ng/L	10.0		77.9	50-150	7.36	30	
Perfluoro-1-butanesulfonamide (FBSA)	8.04	2.0	ng/L	10.0		80.0	50-150	3.41	30	
Perfluorohexanesulfonic acid (PFHxS)	7.99	2.0	ng/L	9.14		87.4	68-131	5.24	30	
Perfluoro-4-oxapentanoic acid (PFMPA)	7.78	2.0	ng/L	10.0		77.4	50-150	0.613	30	
Perfluoro-5-oxahexanoic acid (PFMBA)	8.19	2.0	ng/L	10.0		81.6	50-150	0.427	30	

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B293284 - SOP 454-PFAAS

LCS Dup (B293284-BSD1)

Prepared: 10/27/21 Analyzed: 10/28/21

6:2 Fluorotelomersulfonic acid (6:2FTS A)	8.92	2.0	ng/L	9.54		93.5	64-140	1.08	30	
Perfluoropetanesulfonic acid (PFPeS)	8.41	2.0	ng/L	9.44		89.0	71-127	4.41	30	
Perfluoroundecanoic acid (PFUnA)	8.51	2.0	ng/L	10.0		84.7	69-133	1.44	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	8.76	2.0	ng/L	10.0		87.2	50-150	1.20	30	
Perfluoroheptanoic acid (PFHpA)	8.10	2.0	ng/L	10.0		80.6	72-130	1.31	30	
Perfluorooctanoic acid (PFOA)	8.85	2.0	ng/L	10.0		88.1	71-133	0.416	30	
Perfluorooctanesulfonic acid (PFOS)	8.51	2.0	ng/L	9.29		91.6	65-140	1.72	30	
Perfluorononanoic acid (PFNA)	8.90	2.0	ng/L	10.0		88.6	69-130	3.89	30	

Batch B293592 - SOP 454-PFAAS

Blank (B293592-BLK1)

Prepared: 10/29/21 Analyzed: 11/02/21

Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L							
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L							
Perfluoropentanoic acid (PFPeA)	ND	2.0	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	2.0	ng/L							
9Cl-PF3ONS (F53B Major)	ND	2.0	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	ng/L							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	ng/L							
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L							
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	2.0	ng/L							
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L							
N-EtFOSAA	ND	2.0	ng/L							
N-MeFOSAA	ND	2.0	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L							
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	ng/L							
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L							
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L							
Perfluoronanesulfonic acid (PFNS)	ND	2.0	ng/L							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	ng/L							
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L							
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	ng/L							
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	ng/L							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	ng/L							
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L							
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L							
Perfluorooctanoic acid (PFOA)	ND	2.0	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L							
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L							

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B293592 - SOP 454-PFAAS

LCS (B293592-BS1)

Prepared: 10/29/21 Analyzed: 11/02/21

Perfluorobutanoic acid (PFBA)	7.89	2.0	ng/L	9.83		80.2	73-129			
Perfluorobutanesulfonic acid (PFBS)	7.15	2.0	ng/L	8.70		82.2	72-130			
Perfluoropentanoic acid (PFPeA)	7.91	2.0	ng/L	9.83		80.5	72-129			
Perfluorohexanoic acid (PFHxA)	8.13	2.0	ng/L	9.83		82.7	72-129			
11Cl-PF3OUdS (F53B Minor)	6.28	2.0	ng/L	9.26		67.8	50-150			
9Cl-PF3ONS (F53B Major)	6.09	2.0	ng/L	9.16		66.4	50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	7.13	2.0	ng/L	9.26		77.0	50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	7.01	2.0	ng/L	9.83		71.3	50-150			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	6.53	2.0	ng/L	9.44		69.2	67-138			
Perfluorodecanoic acid (PFDA)	8.31	2.0	ng/L	9.83		84.6	71-129			
Perfluorododecanoic acid (PFDoA)	8.01	2.0	ng/L	9.83		81.5	72-134			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	7.09	2.0	ng/L	8.75		81.0	50-150			
Perfluoroheptanesulfonic acid (PFHpS)	7.99	2.0	ng/L	9.39		85.1	69-134			
N-EtFOSAA	9.87	2.0	ng/L	9.83		100	61-135			
N-MeFOSAA	11.0	2.0	ng/L	9.83		112	65-136			
Perfluorotetradecanoic acid (PFTA)	7.62	2.0	ng/L	9.83		77.5	71-132			
Perfluorotridecanoic acid (PFTrDA)	8.07	2.0	ng/L	9.83		82.1	65-144			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	7.47	2.0	ng/L	9.19		81.3	63-143			
Perfluorodecanesulfonic acid (PFDS)	7.37	2.0	ng/L	9.49		77.7	53-142			
Perfluorooctanesulfonamide (FOSA)	7.96	2.0	ng/L	9.83		80.9	67-137			
Perfluorononanesulfonic acid (PFNS)	7.59	2.0	ng/L	9.44		80.5	69-127			
Perfluoro-1-hexanesulfonamide (FHxSA)	7.12	2.0	ng/L	9.83		72.4	50-150			
Perfluoro-1-butanesulfonamide (FBSA)	7.77	2.0	ng/L	9.83		79.0	50-150			
Perfluorohexanesulfonic acid (PFHxS)	7.47	2.0	ng/L	8.95		83.5	68-131			
Perfluoro-4-oxapentanoic acid (PFMPA)	7.36	2.0	ng/L	9.83		74.8	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	7.36	2.0	ng/L	9.83		74.8	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	7.77	2.0	ng/L	9.34		83.1	64-140			
Perfluoropentanesulfonic acid (PFPeS)	6.95	2.0	ng/L	9.24		75.2	71-127			
Perfluoroundecanoic acid (PFUnA)	8.00	2.0	ng/L	9.83		81.4	69-133			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	7.67	2.0	ng/L	9.83		78.0	50-150			
Perfluoroheptanoic acid (PFHpA)	7.40	2.0	ng/L	9.83		75.3	72-130			
Perfluorooctanoic acid (PFOA)	7.97	2.0	ng/L	9.83		81.1	71-133			
Perfluorooctanesulfonic acid (PFOS)	7.45	2.0	ng/L	9.10		81.9	65-140			
Perfluorononanoic acid (PFNA)	7.85	2.0	ng/L	9.83		79.9	69-130			

LCS Dup (B293592-BS1)

Prepared: 10/29/21 Analyzed: 11/02/21

Perfluorobutanoic acid (PFBA)	7.33	1.9	ng/L	9.56		76.6	73-129	7.35	30	
Perfluorobutanesulfonic acid (PFBS)	6.77	1.9	ng/L	8.46		80.1	72-130	5.42	30	
Perfluoropentanoic acid (PFPeA)	7.39	1.9	ng/L	9.56		77.3	72-129	6.88	30	
Perfluorohexanoic acid (PFHxA)	7.54	1.9	ng/L	9.56		78.9	72-129	7.53	30	
11Cl-PF3OUdS (F53B Minor)	6.53	1.9	ng/L	9.01		72.5	50-150	3.94	30	
9Cl-PF3ONS (F53B Major)	5.87	1.9	ng/L	8.91		65.9	50-150	3.61	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	6.44	1.9	ng/L	9.01		71.5	50-150	10.1	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	6.99	1.9	ng/L	9.56		73.1	50-150	0.338	30	
8:2 Fluorotelomersulfonic acid (8:2FTS A)	7.12	1.9	ng/L	9.18		77.6	67-138	8.64	30	
Perfluorodecanoic acid (PFDA)	7.34	1.9	ng/L	9.56		76.8	71-129	12.5	30	
Perfluorododecanoic acid (PFDoA)	7.43	1.9	ng/L	9.56		77.8	72-134	7.49	30	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	6.53	1.9	ng/L	8.51		76.8	50-150	8.14	30	

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B293592 - SOP 454-PFAAS

LCS Dup (B293592-BSD1)

Prepared: 10/29/21 Analyzed: 11/02/21

Perfluoroheptanesulfonic acid (PFHpS)	7.58	1.9	ng/L	9.13		83.0	69-134	5.25	30	
N-EtFOSAA	9.36	1.9	ng/L	9.56		97.9	61-135	5.28	30	
N-MeFOSAA	10.3	1.9	ng/L	9.56		108	65-136	6.89	30	
Perfluorotetradecanoic acid (PFTA)	7.76	1.9	ng/L	9.56		81.1	71-132	1.71	30	
Perfluorotridecanoic acid (PFTrDA)	7.46	1.9	ng/L	9.56		78.0	65-144	7.87	30	
4:2 Fluorotelomersulfonic acid (4:2FTS A)	7.08	1.9	ng/L	8.94		79.2	63-143	5.45	30	
Perfluorodecanesulfonic acid (PFDS)	6.42	1.9	ng/L	9.23		69.6	53-142	13.8	30	
Perfluorooctanesulfonamide (FOSA)	7.52	1.9	ng/L	9.56		78.7	67-137	5.62	30	
Perfluorononanesulfonic acid (PFNS)	7.77	1.9	ng/L	9.18		84.7	69-127	2.34	30	
Perfluoro-1-hexanesulfonamide (FHxSA)	6.92	1.9	ng/L	9.56		72.4	50-150	2.85	30	
Perfluoro-1-butanesulfonamide (FBSA)	7.41	1.9	ng/L	9.56		77.5	50-150	4.75	30	
Perfluorohexanesulfonic acid (PFHxS)	6.94	1.9	ng/L	8.70		79.8	68-131	7.42	30	
Perfluoro-4-oxapentanoic acid (PFMPA)	6.89	1.9	ng/L	9.56		72.1	50-150	6.55	30	
Perfluoro-5-oxahexanoic acid (PFMBA)	6.88	1.9	ng/L	9.56		72.0	50-150	6.62	30	
6:2 Fluorotelomersulfonic acid (6:2FTS A)	7.52	1.9	ng/L	9.08		82.8	64-140	3.26	30	
Perfluoropetanesulfonic acid (PFPeS)	7.04	1.9	ng/L	8.99		78.3	71-127	1.28	30	
Perfluoroundecanoic acid (PFUnA)	6.90	1.9	ng/L	9.56		72.2	69-133	14.7	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	7.12	1.9	ng/L	9.56		74.4	50-150	7.49	30	
Perfluoroheptanoic acid (PFHpA)	7.00	1.9	ng/L	9.56		73.3	72-130	5.54	30	
Perfluorooctanoic acid (PFOA)	7.26	1.9	ng/L	9.56		76.0	71-133	9.29	30	
Perfluorooctanesulfonic acid (PFOS)	7.50	1.9	ng/L	8.84		84.8	65-140	0.678	30	
Perfluorononanoic acid (PFNA)	7.56	1.9	ng/L	9.56		79.1	69-130	3.84	30	

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
PF-19	Duplicate analysis confirmed Extracted Internal Standard failure due to matrix effects. Original results reported.
S-29	Extracted Internal Standard is outside of control limits.

ANALYST

RAP Raisa A. Petraitis
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JLH Jessica L. Hoffman
EGR Evett G Rivera
BB2 Bethany M Bisnett
BAA Bonita A. Abanulo

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Airport Pond Shallow (21J1050-01) Lab File ID: 21J1050-01.d Analyzed: 10/28/21 19:59									
M8FOSA	67883.28	4.060517	362,634.00	4.060517	19	50 - 150	0.0000	+/-0.50	*
M2-4:2FTS	197873.4	2.58715	159,245.00	2.595367	124	50 - 150	-0.0082	+/-0.50	
M2PFTA	126395.6	4.378417	1,333,856.00	4.378417	09	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS	155606.9	3.850933	172,307.00	3.850933	90	50 - 150	0.0000	+/-0.50	
MPFBA	367179.2	1.0917	602,130.00	1.100017	61	50 - 150	-0.0083	+/-0.50	
M3HFPO-DA	210729.8	2.91295	233,032.00	2.921133	90	50 - 150	-0.0082	+/-0.50	
M6PFDA	669882	3.843467	866,885.00	3.843467	77	50 - 150	0.0000	+/-0.50	
M3PFBS	163557.3	1.969733	140,103.00	1.978033	117	50 - 150	-0.0083	+/-0.50	
M7PFUnA	476598.6	3.994	1,171,547.00	3.994	41	50 - 150	0.0000	+/-0.50	*
M2-6:2FTS	153940.7	3.493333	105,518.00	3.493333	146	50 - 150	0.0000	+/-0.50	
M5PFPeA	711360	1.7826	605,473.00	1.791367	117	50 - 150	-0.0088	+/-0.50	
M5PFHxA	999284.8	2.672333	822,147.00	2.680533	122	50 - 150	-0.0082	+/-0.50	
M3PFHxS	111154.6	3.266833	106,348.00	3.266833	105	50 - 150	0.0000	+/-0.50	
M4PFHpA	997989.1	3.2357	792,703.00	3.2357	126	50 - 150	0.0000	+/-0.50	
M8PFOA	867402.9	3.50185	827,978.00	3.51015	105	50 - 150	-0.0083	+/-0.50	
M8PFOS	112261.2	3.692083	124,628.00	3.692083	90	50 - 150	0.0000	+/-0.50	
M9PFNA	737584.8	3.693117	806,227.00	3.693117	91	50 - 150	0.0000	+/-0.50	
MPFDoA	242140.8	4.1288	1,177,447.00	4.1288	21	50 - 150	0.0000	+/-0.50	*
d5-NEtFOSAA	116488.6	4.001467	229,719.00	4.001467	51	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	176775	3.921883	269,307.00	3.921883	66	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Airport Pond Deep (21J1050-02)									
			Lab File ID: 21J1050-02.d			Analyzed: 10/28/21 20:07			
M8FOSA	105593.9	4.060517	362,634.00	4.060517	29	50 - 150	0.0000	+/-0.50	*
M2-4:2FTS	185379.4	2.587167	159,245.00	2.595367	116	50 - 150	-0.0082	+/-0.50	
M2-8:2FTS	202522.5	3.85095	172,307.00	3.850933	118	50 - 150	0.0000	+/-0.50	
MPFBA	447285.5	1.100017	602,130.00	1.100017	74	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	231617.8	2.91295	233,032.00	2.921133	99	50 - 150	-0.0082	+/-0.50	
M6PFDA	884534	3.843483	866,885.00	3.843467	102	50 - 150	0.0000	+/-0.50	
M3PFBS	168360.4	1.96975	140,103.00	1.978033	120	50 - 150	-0.0083	+/-0.50	
M7PFUnA	826540.3	3.994	1,171,547.00	3.994	71	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	158188.1	3.49335	105,518.00	3.493333	150	50 - 150	0.0000	+/-0.50	
M5PFPeA	729070.5	1.7826	605,473.00	1.791367	120	50 - 150	-0.0088	+/-0.50	
M5PFHxA	1024842	2.672333	822,147.00	2.680533	125	50 - 150	-0.0082	+/-0.50	
M3PFHxS	122824.4	3.266833	106,348.00	3.266833	115	50 - 150	0.0000	+/-0.50	
M4PFHpA	1050519	3.2357	792,703.00	3.2357	133	50 - 150	0.0000	+/-0.50	
M8PFOA	930089	3.501867	827,978.00	3.51015	112	50 - 150	-0.0083	+/-0.50	
M8PFOS	129615	3.692083	124,628.00	3.692083	104	50 - 150	0.0000	+/-0.50	
M9PFNA	798075.1	3.693117	806,227.00	3.693117	99	50 - 150	0.0000	+/-0.50	
MPFDoA	591194.9	4.1288	1,177,447.00	4.1288	50	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	172957.6	4.001483	229,719.00	4.001467	75	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	209815.2	3.9219	269,307.00	3.921883	78	50 - 150	0.0000	+/-0.50	
Airport Pond Deep (21J1050-02RE1)									
			Lab File ID: 21J1050-02RE1.d			Analyzed: 11/02/21 22:42			
M2PFTA	1977726	4.394683	1,620,972.00	4.394667	122	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B293284-BLK1)			Lab File ID: B293284-BLK1.d			Analyzed: 10/28/21 19:52			
M8FOSA	339836.3	4.060517	362,634.00	4.060517	94	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	157171.5	2.595367	159,245.00	2.595367	99	50 - 150	0.0000	+/-0.50	
M2PFTA	1346891	4.3703	1,333,856.00	4.378417	101	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	176210.1	3.850933	172,307.00	3.850933	102	50 - 150	0.0000	+/-0.50	
MPFBA	862798.8	1.100017	602,130.00	1.100017	143	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	250705.5	2.921133	233,032.00	2.921133	108	50 - 150	0.0000	+/-0.50	
M6PFDA	995256.3	3.843467	866,885.00	3.843467	115	50 - 150	0.0000	+/-0.50	
M3PFBS	177421.6	1.978033	140,103.00	1.978033	127	50 - 150	0.0000	+/-0.50	
M7PFUnA	1260513	3.994	1,171,547.00	3.994	108	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	104268.6	3.49335	105,518.00	3.493333	99	50 - 150	0.0000	+/-0.50	
M5PFPeA	819237.2	1.791367	605,473.00	1.791367	135	50 - 150	0.0000	+/-0.50	
M5PFHxA	1064753	2.68875	822,147.00	2.680533	130	50 - 150	0.0082	+/-0.50	
M3PFHxS	128157.2	3.266833	106,348.00	3.266833	121	50 - 150	0.0000	+/-0.50	
M4PFHpA	1067473	3.2357	792,703.00	3.2357	135	50 - 150	0.0000	+/-0.50	
M8PFOA	987711.8	3.510167	827,978.00	3.51015	119	50 - 150	0.0000	+/-0.50	
M8PFOS	135482.6	3.692083	124,628.00	3.692083	109	50 - 150	0.0000	+/-0.50	
M9PFNA	880795.9	3.693117	806,227.00	3.693117	109	50 - 150	0.0000	+/-0.50	
MPFDoA	1139333	4.1288	1,177,447.00	4.1288	97	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	217502.9	4.001467	229,719.00	4.001467	95	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	255533.9	3.921883	269,307.00	3.921883	95	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B293284-BS1)									
			Lab File ID: B293284-BS1.d			Analyzed: 10/28/21 19:38			
M8FOSA	378890.5	4.060517	362,634.00	4.060517	104	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	138838	2.595383	159,245.00	2.595367	87	50 - 150	0.0000	+/-0.50	
M2PFTA	1355808	4.378417	1,333,856.00	4.378417	102	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	163839.9	3.850933	172,307.00	3.850933	95	50 - 150	0.0000	+/-0.50	
MPFBA	898888	1.100017	602,130.00	1.100017	149	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	297471.8	2.921133	233,032.00	2.921133	128	50 - 150	0.0000	+/-0.50	
M6PFDA	1082756	3.843467	866,885.00	3.843467	125	50 - 150	0.0000	+/-0.50	
M3PFBS	183110.4	1.978033	140,103.00	1.978033	131	50 - 150	0.0000	+/-0.50	
M7PFUnA	1352255	3.994	1,171,547.00	3.994	115	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	99605.43	3.49335	105,518.00	3.493333	94	50 - 150	0.0000	+/-0.50	
M5PFPeA	846608.4	1.791367	605,473.00	1.791367	140	50 - 150	0.0000	+/-0.50	
M5PFHxA	1112695	2.688767	822,147.00	2.680533	135	50 - 150	0.0082	+/-0.50	
M3PFHxS	128990.2	3.266833	106,348.00	3.266833	121	50 - 150	0.0000	+/-0.50	
M4PFHpA	1106522	3.2357	792,703.00	3.2357	140	50 - 150	0.0000	+/-0.50	
M8PFOA	981974.3	3.510167	827,978.00	3.51015	119	50 - 150	0.0000	+/-0.50	
M8PFOS	146306.2	3.692083	124,628.00	3.692083	117	50 - 150	0.0000	+/-0.50	
M9PFNA	928009.6	3.693117	806,227.00	3.693117	115	50 - 150	0.0000	+/-0.50	
MPFDoA	1208880	4.136817	1,177,447.00	4.1288	103	50 - 150	0.0080	+/-0.50	
d5-NEtFOSAA	228297.5	4.001467	229,719.00	4.001467	99	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	286627.6	3.9219	269,307.00	3.921883	106	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS Dup (B293284-BSD1)									
			Lab File ID: B293284-BSD1.d			Analyzed: 10/28/21 19:45			
M8FOSA	386030.9	4.060517	362,634.00	4.060517	106	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	158393.5	2.595383	159,245.00	2.595367	99	50 - 150	0.0000	+/-0.50	
M2PFTA	1566244	4.3703	1,333,856.00	4.378417	117	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	187382.2	3.850933	172,307.00	3.850933	109	50 - 150	0.0000	+/-0.50	
MPFBA	937921.1	1.100017	602,130.00	1.100017	156	50 - 150	0.0000	+/-0.50	*
M3HFPO-DA	302243.4	2.921133	233,032.00	2.921133	130	50 - 150	0.0000	+/-0.50	
M6PFDA	1197391	3.843467	866,885.00	3.843467	138	50 - 150	0.0000	+/-0.50	
M3PFBS	189456.9	1.986217	140,103.00	1.978033	135	50 - 150	0.0082	+/-0.50	
M7PFUnA	1406791	3.994	1,171,547.00	3.994	120	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	109872.8	3.49335	105,518.00	3.493333	104	50 - 150	0.0000	+/-0.50	
M5PFPeA	874755	1.791367	605,473.00	1.791367	144	50 - 150	0.0000	+/-0.50	
M5PFHxA	1161306	2.688767	822,147.00	2.680533	141	50 - 150	0.0082	+/-0.50	
M3PFHxS	136449.3	3.266833	106,348.00	3.266833	128	50 - 150	0.0000	+/-0.50	
M4PFHpA	1154954	3.2357	792,703.00	3.2357	146	50 - 150	0.0000	+/-0.50	
M8PFOA	1062348	3.510167	827,978.00	3.51015	128	50 - 150	0.0000	+/-0.50	
M8PFOS	146980.3	3.692083	124,628.00	3.692083	118	50 - 150	0.0000	+/-0.50	
M9PFNA	932996.1	3.693117	806,227.00	3.693117	116	50 - 150	0.0000	+/-0.50	
MPFDoA	1388857	4.1288	1,177,447.00	4.1288	118	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	253443.6	4.001467	229,719.00	4.001467	110	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	300769.3	3.9219	269,307.00	3.921883	112	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B293592-BLK1)			Lab File ID: B293592-BLK1.d			Analyzed: 11/02/21 22:28			
M8FOSA	428780.8	4.052516	428,241.00	4.052516	100	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	182876.3	2.644867	176,628.00	2.644867	104	50 - 150	0.0000	+/-0.50	
M2PFTA	1081897	4.394667	1,620,972.00	4.394667	67	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	201150.2	3.86685	189,958.00	3.866833	106	50 - 150	0.0000	+/-0.50	
MPFBA	984792.1	1.12495	732,834.00	1.12495	134	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	280692.7	2.954083	264,291.00	2.954083	106	50 - 150	0.0000	+/-0.50	
M6PFDA	1312455	3.867333	1,025,629.00	3.867333	128	50 - 150	0.0000	+/-0.50	
M3PFBS	199351.7	2.02765	160,875.00	2.019367	124	50 - 150	0.0083	+/-0.50	
M7PFUnA	1673391	4.017967	1,429,690.00	4.017967	117	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	130865.4	3.517617	120,758.00	3.517617	108	50 - 150	0.0000	+/-0.50	
M5PFPeA	939765.7	1.8328	737,475.00	1.8328	127	50 - 150	0.0000	+/-0.50	
M5PFHxA	1286390	2.73905	1,001,537.00	2.730867	128	50 - 150	0.0082	+/-0.50	
M3PFHxS	153723.8	3.2923	126,265.00	3.2923	122	50 - 150	0.0000	+/-0.50	
M4PFHpA	1250234	3.25995	995,204.00	3.25995	126	50 - 150	0.0000	+/-0.50	
M8PFOA	1277643	3.526133	1,012,893.00	3.526133	126	50 - 150	0.0000	+/-0.50	
M8PFOS	179711.4	3.7083	146,568.00	3.708283	123	50 - 150	0.0000	+/-0.50	
M9PFNA	1295095	3.709283	984,965.00	3.709283	131	50 - 150	0.0000	+/-0.50	
MPFDoA	1627821	4.153133	1,373,461.00	4.153133	119	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	285329.4	4.02545	280,692.00	4.02545	102	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	336710.8	3.945867	287,946.00	3.945867	117	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<p>LCS (B293592-BS1) Lab File ID: B293592-BS1.d Analyzed: 11/02/21 22:13</p>									
M8FOSA	439349.6	4.052516	428,241.00	4.052516	103	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	173746.3	2.644867	176,628.00	2.644867	98	50 - 150	0.0000	+/-0.50	
M2PFTA	1635820	4.394667	1,620,972.00	4.394667	101	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	205111.3	3.86685	189,958.00	3.866833	108	50 - 150	0.0000	+/-0.50	
MPFBA	947305.7	1.12495	732,834.00	1.12495	129	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	299891	2.954083	264,291.00	2.954083	113	50 - 150	0.0000	+/-0.50	
M6PFDA	1201900	3.867333	1,025,629.00	3.867333	117	50 - 150	0.0000	+/-0.50	
M3PFBS	191459	2.02765	160,875.00	2.019367	119	50 - 150	0.0083	+/-0.50	
M7PFUnA	1554933	4.017983	1,429,690.00	4.017967	109	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	124903.5	3.517617	120,758.00	3.517617	103	50 - 150	0.0000	+/-0.50	
M5PFPeA	894245.8	1.8328	737,475.00	1.8328	121	50 - 150	0.0000	+/-0.50	
M5PFHxA	1226630	2.73905	1,001,537.00	2.730867	122	50 - 150	0.0082	+/-0.50	
M3PFHxS	156229	3.2923	126,265.00	3.2923	124	50 - 150	0.0000	+/-0.50	
M4PFHpA	1205740	3.25995	995,204.00	3.25995	121	50 - 150	0.0000	+/-0.50	
M8PFOA	1235728	3.52615	1,012,893.00	3.526133	122	50 - 150	0.0000	+/-0.50	
M8PFOS	177797.8	3.7083	146,568.00	3.708283	121	50 - 150	0.0000	+/-0.50	
M9PFNA	1201331	3.709283	984,965.00	3.709283	122	50 - 150	0.0000	+/-0.50	
MPFDoA	1595567	4.153133	1,373,461.00	4.153133	116	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	275076.3	4.02545	280,692.00	4.02545	98	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	318454.6	3.945867	287,946.00	3.945867	111	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS Dup (B293592-BSD1)									
			Lab File ID: B293592-BSD1.d			Analyzed: 11/02/21 22:21			
M8FOSA	511100.3	4.052516	428,241.00	4.052516	119	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	199371.8	2.644867	176,628.00	2.644867	113	50 - 150	0.0000	+/-0.50	
M2PFTA	1853746	4.394667	1,620,972.00	4.394667	114	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	217350	3.86685	189,958.00	3.866833	114	50 - 150	0.0000	+/-0.50	
MPFBA	1072361	1.12495	732,834.00	1.12495	146	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	317562.1	2.954083	264,291.00	2.954083	120	50 - 150	0.0000	+/-0.50	
M6PFDA	1340522	3.867333	1,025,629.00	3.867333	131	50 - 150	0.0000	+/-0.50	
M3PFBS	220888.7	2.019367	160,875.00	2.019367	137	50 - 150	0.0000	+/-0.50	
M7PFUnA	1800183	4.017983	1,429,690.00	4.017967	126	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	134482.9	3.517617	120,758.00	3.517617	111	50 - 150	0.0000	+/-0.50	
M5PFPeA	1016936	1.8328	737,475.00	1.8328	138	50 - 150	0.0000	+/-0.50	
M5PFHxA	1391533	2.73905	1,001,537.00	2.730867	139	50 - 150	0.0082	+/-0.50	
M3PFHxS	169977.1	3.2923	126,265.00	3.2923	135	50 - 150	0.0000	+/-0.50	
M4PFHpA	1390792	3.25995	995,204.00	3.25995	140	50 - 150	0.0000	+/-0.50	
M8PFOA	1405918	3.52615	1,012,893.00	3.526133	139	50 - 150	0.0000	+/-0.50	
M8PFOS	190121.4	3.7083	146,568.00	3.708283	130	50 - 150	0.0000	+/-0.50	
M9PFNA	1339221	3.709283	984,965.00	3.709283	136	50 - 150	0.0000	+/-0.50	
MPFDoA	1773394	4.153133	1,373,461.00	4.153133	129	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	309208	4.02545	280,692.00	4.02545	110	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	365928.7	3.945867	287,946.00	3.945867	127	50 - 150	0.0000	+/-0.50	

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S064822-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	439	0.9146863	0.8522681		-12.2	30
Perfluorobutanesulfonic acid (PFBS)	A	444	412	1.040273	0.9960718		-7.3	30
Perfluoropentanoic acid (PFPeA)	A	500	455	0.9690369	0.9306022		-9.0	30
Perfluorohexanoic acid (PFHxA)	A	500	446	0.8795644	0.8254836		-10.8	30
11Cl-PF3OUdS (F53B Minor)	A	472	453	1.927545	2.00158		-4.0	30
9Cl-PF3ONS (F53B Major)	A	466	367	4.280411	3.903187		-21.2	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	386	1.813604	1.603667		-18.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	427	0.1571587	0.1360126		-14.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	411	0.8640553	0.8470935		-14.4	30
Perfluorodecanoic acid (PFDA)	A	500	402	0.9325406	0.8101371		-19.6	30
Perfluorododecanoic acid (PFDoA)	A	500	433	0.9617566	0.8966043		-13.3	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	385	4.233439	3.81482		-13.4	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	486	0.4771225	0.5151391		2.2	30
N-EtFOSAA	A	500	433	0.9116763	0.8605043		-13.4	30
N-MeFOSAA	A	500	438	0.8782699	0.7963218		-12.5	30
Perfluorotetradecanoic acid (PFTA)	A	500	419	0.9335956	0.8789884		-16.3	30
Perfluorotridecanoic acid (PFTrDA)	A	500	430	1.096096	1.077487		-13.9	30
Perfluorodecanesulfonic acid (PFDS)	A	482	405	0.6687577	0.5695678		-15.9	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	415	1.111174	1.102686		-11.4	30
Perfluorooctanesulfonamide (FOSA)	A	500	443	0.879319	0.8199872		-11.3	30
Perfluorononanesulfonic acid (PFNS)	A	481	511	0.3406347	0.3567931		6.3	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	438	0.3911006	0.3611517		-12.3	30
Perfluoro-1-butanefulfonamide (FBSA)	A	500	426	0.3387278	0.2999466		-14.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	456	0.995535	1.026257		-0.2	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	417	0.5384319	0.4822581		-16.6	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	422	0.6322055	0.5694019		-15.6	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	399	0.9922045	0.9348154		-16.2	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	437	1.046291	1.00851		-7.0	30
Perfluoroundecanoic acid (PFUnA)	A	500	412	0.8863898	0.7774105		-17.6	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	437	0.3536044	0.3303644		-12.5	30
Perfluoroheptanoic acid (PFHpA)	A	500	439	1.038024	0.9372174		-12.2	30
Perfluorooctanoic acid (PFOA)	A	500	430	0.9234623	0.8412049		-13.9	30
Perfluorooctanesulfonic acid (PFOS)	A	464	362	0.9738652	0.7786045		-22.0	30
Perfluorononanoic acid (PFNA)	A	500	462	0.9601163	0.9270417		-7.7	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S064822-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2490	0.9146863	0.9668455		-0.4	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2280	1.040273	1.101018		2.5	30
Perfluoropentanoic acid (PFPeA)	A	2500	2540	0.9690369	1.039321		1.6	30
Perfluorohexanoic acid (PFHxA)	A	2500	2500	0.8795644	0.9241933		-0.09	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2500	1.927545	2.206124		6.0	30
9Cl-PF3ONS (F53B Major)	A	2330	2170	4.280411	4.598715		-6.9	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2090	1.813604	1.738746		-11.4	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2460	0.1571587	0.1574421		-1.4	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2750	0.8640553	1.116764		14.7	30
Perfluorodecanoic acid (PFDA)	A	2500	2430	0.9325406	0.9811202		-2.6	30
Perfluorododecanoic acid (PFDoA)	A	2500	2250	0.9617566	0.9310768		-10.0	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2210	4.233439	4.403766		-0.3	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2780	0.4771225	0.5852696		16.9	30
N-EtFOSAA	A	2500	2590	0.9116763	1.030514		3.7	30
N-MeFOSAA	A	2500	3010	0.8782699	1.093908		20.2	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2350	0.9335956	0.9825763		-5.9	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2210	1.096096	1.09923		-11.6	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2480	1.111174	1.300334		6.0	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2500	0.6687577	0.7010844		3.5	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2520	0.879319	0.9331945		0.9	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2820	0.3406347	0.3949919		17.7	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2450	0.3911006	0.4031292		-2.1	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2490	0.3387278	0.3504165		-0.4	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2260	0.995535	1.018252		-1.0	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2350	0.5384319	0.5444878		-5.9	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2400	0.6322055	0.6483107		-3.9	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2450	0.9922045	1.132634		3.0	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2430	1.046291	1.120014		3.3	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2470	0.8863898	0.9324449		-1.2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2490	0.3536044	0.3753155		-0.5	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2330	1.038024	0.9959792		-6.9	30
Perfluorooctanoic acid (PFOA)	A	2500	2460	0.9234623	0.9625573		-1.6	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2370	0.9738652	1.020141		2.2	30
Perfluorononanoic acid (PFNA)	A	2500	2580	0.9601163	1.037344		3.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S064822-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2480	0.9146863	0.9618643		-0.9	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2280	1.040273	1.1032		2.7	30
Perfluoropentanoic acid (PFPeA)	A	2500	2480	0.9690369	1.016246		-0.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2480	0.8795644	0.9189074		-0.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2770	1.927545	2.440693		17.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2230	4.280411	4.729291		-4.3	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2160	1.813604	1.795576		-8.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2640	0.1571587	0.1684945		5.5	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2570	0.8640553	1.043753		7.1	30
Perfluorodecanoic acid (PFDA)	A	2500	2560	0.9325406	1.030618		2.3	30
Perfluorododecanoic acid (PFDoA)	A	2500	2440	0.9617566	1.009727		-2.4	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2220	4.233439	4.412465		-0.08	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2710	0.4771225	0.5708552		14.0	30
N-EtFOSAA	A	2500	2360	0.9116763	0.9369979		-5.7	30
N-MeFOSAA	A	2500	2740	0.8782699	0.9982717		9.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2370	0.9335956	0.9891316		-5.3	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2290	1.096096	1.140667		-8.2	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2280	0.6687577	0.6404522		-5.4	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2390	1.111174	1.253651		2.1	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2350	0.879319	0.8703403		-5.9	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2730	0.3406347	0.3816286		13.7	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2360	0.3911006	0.3881637		-5.7	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2510	0.3387278	0.3538442		0.6	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2310	0.995535	1.043968		1.5	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2350	0.5384319	0.5435966		-6.1	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2390	0.6322055	0.6458716		-4.3	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2420	0.9922045	1.120074		1.9	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2560	1.046291	1.180867		8.9	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2460	0.8863898	0.9273785		-1.8	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2500	0.3536044	0.3768395		-0.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2290	1.038024	0.9790341		-8.5	30
Perfluorooctanoic acid (PFOA)	A	2500	2650	0.9234623	1.034762		5.8	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2420	0.9738652	1.041866		4.4	30
Perfluorononanoic acid (PFNA)	A	2500	2470	0.9601163	0.9928882		-1.3	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S064822-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2480	0.9146863	0.961024		-1.0	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2270	1.040273	1.099124		2.3	30
Perfluoropentanoic acid (PFPeA)	A	2500	2510	0.9690369	1.026143		0.3	30
Perfluorohexanoic acid (PFHxA)	A	2500	2530	0.8795644	0.9378791		1.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2520	1.927545	2.223865		6.9	30
9Cl-PF3ONS (F53B Major)	A	2330	2190	4.280411	4.634562		-6.2	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2130	1.813604	1.771105		-9.8	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2390	0.1571587	0.1523735		-4.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2780	0.8640553	1.128196		15.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2600	0.9325406	1.048425		4.1	30
Perfluorododecanoic acid (PFDoA)	A	2500	2410	0.9617566	0.9963307		-3.7	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2210	4.233439	4.387974		-0.6	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2710	0.4771225	0.5691183		13.7	30
N-EtFOSAA	A	2500	2320	0.9116763	0.9217062		-7.3	30
N-MeFOSAA	A	2500	2760	0.8782699	1.004921		10.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2500	0.9335956	1.045693		0.2	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2510	1.096096	1.248987		0.6	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2240	0.6687577	0.628184		-7.2	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2450	1.111174	1.283589		4.6	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2530	0.879319	0.93682		1.3	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2880	0.3406347	0.4027035		20.0	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2240	0.3911006	0.3692888		-10.3	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2440	0.3387278	0.3426847		-2.6	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2410	0.995535	1.084754		5.5	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2380	0.5384319	0.5499282		-5.0	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2430	0.6322055	0.6562261		-2.8	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2600	0.9922045	1.201319		9.4	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2360	1.046291	1.088736		0.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2470	0.8863898	0.9311121		-1.4	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2530	0.3536044	0.381281		1.0	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2330	1.038024	0.997875		-6.8	30
Perfluorooctanoic acid (PFOA)	A	2500	2390	0.9234623	0.9342765		-4.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2430	0.9738652	1.046713		4.9	30
Perfluorononanoic acid (PFNA)	A	2500	2650	0.9601163	1.066805		6.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S064822-CCV5

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2480	0.9146863	0.9631841		-0.8	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2250	1.040273	1.090827		1.6	30
Perfluoropentanoic acid (PFPeA)	A	2500	2550	0.9690369	1.041929		1.8	30
Perfluorohexanoic acid (PFHxA)	A	2500	2480	0.8795644	0.9162656		-0.9	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2430	1.927545	2.146387		3.1	30
9Cl-PF3ONS (F53B Major)	A	2330	2070	4.280411	4.397533		-11.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2120	1.813604	1.762157		-10.2	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2230	0.1571587	0.1425122		-10.7	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2170	0.8640553	0.8826387		-9.7	30
Perfluorodecanoic acid (PFDA)	A	2500	2370	0.9325406	0.9562123		-5.1	30
Perfluorododecanoic acid (PFDoA)	A	2500	2460	0.9617566	1.017921		-1.6	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2210	4.233439	4.405366		-0.2	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2590	0.4771225	0.545637		8.9	30
N-EtFOSAA	A	2500	2480	0.9116763	0.9877045		-0.6	30
N-MeFOSAA	A	2500	2970	0.8782699	1.080414		18.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2490	0.9335956	1.039098		-0.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2590	1.096096	1.285879		3.6	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2370	0.6687577	0.666316		-1.6	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2380	1.111174	1.250811		1.9	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2500	0.879319	0.9233862		-0.1	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2730	0.3406347	0.38112		13.6	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2260	0.3911006	0.3724044		-9.6	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2460	0.3387278	0.3460181		-1.6	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2510	0.995535	1.131499		10.0	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2320	0.5384319	0.5379743		-7.0	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2400	0.6322055	0.6488747		-3.8	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2440	0.9922045	1.127014		2.5	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2470	1.046291	1.141401		5.2	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2570	0.8863898	0.9720925		3.0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2440	0.3536044	0.3678034		-2.5	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2290	1.038024	0.9799233		-8.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2610	0.9234623	1.019537		4.3	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2550	0.9738652	1.096678		9.9	30
Perfluorononanoic acid (PFNA)	A	2500	2590	0.9601163	1.041376		3.5	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S064960-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	429	0.9146863	0.8330675		-14.2	30
Perfluorobutanesulfonic acid (PFBS)	A	444	391	1.040273	0.9461383		-11.9	30
Perfluoropentanoic acid (PFPeA)	A	500	442	0.9690369	0.9044645		-11.6	30
Perfluorohexanoic acid (PFHxA)	A	500	450	0.8795644	0.8330126		-9.9	30
11Cl-PF3OUdS (F53B Minor)	A	472	397	1.927545	1.75258		-15.9	30
9Cl-PF3ONS (F53B Major)	A	466	367	4.280411	3.897745		-21.3	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	373	1.813604	1.552918		-20.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	406	0.1571587	0.129357		-18.7	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	467	0.8640553	0.9616394		-2.8	30
Perfluorodecanoic acid (PFDA)	A	500	413	0.9325406	0.8322069		-17.4	30
Perfluorododecanoic acid (PFDoA)	A	500	458	0.9617566	0.9479869		-8.4	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	376	4.233439	3.718155		-15.6	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	417	0.4771225	0.441803		-12.4	30
N-EtFOSAA	A	500	410	0.9116763	0.8150358		-18.0	30
N-MeFOSAA	A	500	500	0.8782699	0.9106013		0.08	30
Perfluorotetradecanoic acid (PFTA)	A	500	421	0.9335956	0.8833731		-15.9	30
Perfluorotridecanoic acid (PFTrDA)	A	500	399	1.096096	0.9990154		-20.2	30
Perfluorodecanesulfonic acid (PFDS)	A	482	518	0.6687577	0.7274517		7.4	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	417	1.111174	1.108736		-10.9	30
Perfluorooctanesulfonamide (FOSA)	A	500	407	0.879319	0.7519466		-18.7	30
Perfluorononanesulfonic acid (PFNS)	A	481	452	0.3406347	0.3150295		-6.1	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	417	0.3911006	0.3438004		-16.5	30
Perfluoro-1-butanesulfonamide (FBSA)	A	500	429	0.3387278	0.3019688		-14.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	423	0.995535	0.9516372		-7.5	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	410	0.5384319	0.4745499		-18.0	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	416	0.6322055	0.5614233		-16.8	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	413	0.9922045	0.9680484		-13.2	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	395	1.046291	0.9124606		-15.9	30
Perfluoroundecanoic acid (PFUnA)	A	500	466	0.8863898	0.8790136		-6.9	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	411	0.3536044	0.3103346		-17.8	30
Perfluoroheptanoic acid (PFHpA)	A	500	405	1.038024	0.8655698		-18.9	30
Perfluorooctanoic acid (PFOA)	A	500	431	0.9234623	0.8418265		-13.9	30
Perfluorooctanesulfonic acid (PFOS)	A	464	407	0.9738652	0.8751917		-12.3	30
Perfluorononanoic acid (PFNA)	A	500	440	0.9601163	0.8830278		-12.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S064960-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2190	0.9146863	0.8499954		-12.4	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2000	1.040273	0.9682813		-9.9	30
Perfluoropentanoic acid (PFPeA)	A	2500	2210	0.9690369	0.9063921		-11.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2250	0.8795644	0.8325501		-10.0	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2060	1.927545	1.816066		-12.8	30
9Cl-PF3ONS (F53B Major)	A	2330	1730	4.280411	3.663687		-25.9	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	1800	1.813604	1.499196		-23.6	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	1920	0.1571587	0.1226641		-23.1	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2140	0.8640553	0.8730375		-10.7	30
Perfluorodecanoic acid (PFDA)	A	2500	2190	0.9325406	0.8825168		-12.4	30
Perfluorododecanoic acid (PFDoA)	A	2500	2050	0.9617566	0.8491371		-17.9	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	1910	4.233439	3.796999		-14.0	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2250	0.4771225	0.4730194		-5.7	30
N-EtFOSAA	A	2500	2080	0.9116763	0.8255659		-16.9	30
N-MeFOSAA	A	2500	2660	0.8782699	0.9690955		6.5	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2030	0.9335956	0.848749		-18.8	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	1940	1.096096	0.9640431		-22.5	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2180	1.111174	1.143404		-7.0	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2230	0.6687577	0.626404		-7.5	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2080	0.879319	0.7705177		-16.7	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2400	0.3406347	0.3351586		-0.1	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2130	0.3911006	0.3500101		-15.0	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2220	0.3387278	0.3129444		-11.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2080	0.995535	0.9378824		-8.8	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2130	0.5384319	0.4932908		-14.8	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2110	0.6322055	0.5685314		-15.7	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2260	0.9922045	1.045919		-5.0	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2000	1.046291	0.9242556		-14.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2160	0.8863898	0.8149887		-13.7	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2080	0.3536044	0.3140979		-16.8	30
Perfluoroheptanoic acid (PFHpA)	A	2500	1930	1.038024	0.8259952		-22.8	30
Perfluorooctanoic acid (PFOA)	A	2500	2250	0.9234623	0.8813795		-9.9	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2130	0.9738652	0.9142696		-8.4	30
Perfluorononanoic acid (PFNA)	A	2500	2350	0.9601163	0.9472904		-5.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S064960-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2160	0.9146863	0.8381122		-13.7	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2020	1.040273	0.9779257		-9.0	30
Perfluoropentanoic acid (PFPeA)	A	2500	2190	0.9690369	0.8977785		-12.2	30
Perfluorohexanoic acid (PFHxA)	A	2500	2180	0.8795644	0.8082761		-12.6	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2020	1.927545	1.779034		-14.5	30
9Cl-PF3ONS (F53B Major)	A	2330	1810	4.280411	3.837385		-22.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	1870	1.813604	1.55528		-20.8	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	1810	0.1571587	0.1152861		-27.7	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2070	0.8640553	0.8431064		-13.8	30
Perfluorodecanoic acid (PFDA)	A	2500	2170	0.9325406	0.8746671		-13.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2260	0.9617566	0.9364191		-9.5	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	1940	4.233439	3.85705		-12.6	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2140	0.4771225	0.4519339		-9.9	30
N-EtFOSAA	A	2500	2450	0.9116763	0.9730937		-2.1	30
N-MeFOSAA	A	2500	2760	0.8782699	1.006319		10.6	30
Perfluorotetradecanoic acid (PFTA)	A	2500	1880	0.9335956	0.7862806		-24.8	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	1920	1.096096	0.957287		-23.1	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2450	0.6687577	0.6887336		1.7	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2190	1.111174	1.151818		-6.3	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2140	0.879319	0.7917674		-14.4	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2130	0.3406347	0.2984056		-11.1	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2020	0.3911006	0.3334685		-19.0	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2180	0.3387278	0.3060943		-13.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2170	0.995535	0.9795317		-4.7	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2070	0.5384319	0.4800534		-17.0	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2120	0.6322055	0.573223		-15.1	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	1970	0.9922045	0.9126787		-17.3	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2110	1.046291	0.9721506		-10.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2130	0.8863898	0.8059443		-14.6	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2100	0.3536044	0.3170112		-16.0	30
Perfluoroheptanoic acid (PFHpA)	A	2500	1980	1.038024	0.8455526		-21.0	30
Perfluorooctanoic acid (PFOA)	A	2500	2250	0.9234623	0.8786139		-10.1	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2130	0.9738652	0.9153226		-8.3	30
Perfluorononanoic acid (PFNA)	A	2500	2290	0.9601163	0.9195524		-8.6	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S064960-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2160	0.9146863	0.8392061		-13.5	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2000	1.040273	0.9663869		-10.0	30
Perfluoropentanoic acid (PFPeA)	A	2500	2220	0.9690369	0.9096966		-11.1	30
Perfluorohexanoic acid (PFHxA)	A	2500	2270	0.8795644	0.8402871		-9.2	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2200	1.927545	1.93778		-6.9	30
9Cl-PF3ONS (F53B Major)	A	2330	1870	4.280411	3.972669		-19.6	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	1870	1.813604	1.554634		-20.8	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2000	0.1571587	0.1275366		-20.1	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2300	0.8640553	0.9366601		-4.1	30
Perfluorodecanoic acid (PFDA)	A	2500	2300	0.9325406	0.9283494		-7.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2210	0.9617566	0.9126057		-11.8	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	1890	4.233439	3.75864		-14.8	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2430	0.4771225	0.5125742		2.3	30
N-EtFOSAA	A	2500	2210	0.9116763	0.8771758		-11.8	30
N-MeFOSAA	A	2500	2770	0.8782699	1.008233		10.8	30
Perfluorotetradecanoic acid (PFTA)	A	2500	1920	0.9335956	0.8028789		-23.2	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2000	1.096096	0.9930571		-20.2	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2160	1.111174	1.135854		-7.6	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2080	0.6687577	0.5831702		-13.9	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2070	0.879319	0.7670489		-17.0	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2160	0.3406347	0.3027008		-9.8	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2010	0.3911006	0.3304159		-19.8	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2200	0.3387278	0.3094347		-12.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2080	0.995535	0.9364377		-8.9	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2090	0.5384319	0.4833169		-16.5	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2140	0.6322055	0.5789029		-14.2	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2190	0.9922045	1.012634		-8.1	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2000	1.046291	0.9215873		-15.0	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2140	0.8863898	0.8087668		-14.3	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2060	0.3536044	0.311143		-17.6	30
Perfluoroheptanoic acid (PFHpA)	A	2500	1960	1.038024	0.8373929		-21.7	30
Perfluorooctanoic acid (PFOA)	A	2500	2190	0.9234623	0.857817		-12.3	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2150	0.9738652	0.9244662		-7.3	30
Perfluorononanoic acid (PFNA)	A	2500	2430	0.9601163	0.9773023		-2.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SOP-454 PFAS in Water</i>	
Perfluorobutanoic acid (PFBA)	NH-P
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluoropentanoic acid (PFPeA)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
11Cl-PF3OUdS (F53B Minor)	NH-P
9Cl-PF3ONS (F53B Major)	NH-P
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P
8:2 Fluorotelomersulfonic acid (8:2FTS A)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	NH-P
Perfluoroheptanesulfonic acid (PFHpS)	NH-P
N-EtFOSAA	NH-P
N-MeFOSAA	NH-P
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
4:2 Fluorotelomersulfonic acid (4:2FTS A)	NH-P
Perfluorodecanesulfonic acid (PFDS)	NH-P
Perfluorooctanesulfonamide (FOSA)	NH-P
Perfluorononanesulfonic acid (PFNS)	NH-P
Perfluoro-1-hexanesulfonamide (FHxSA)	NH-P
Perfluoro-1-butanefulfonamide (FBSA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
Perfluoro-4-oxapentanoic acid (PFMPA)	NH-P
Perfluoro-5-oxahexanoic acid (PFMBA)	NH-P
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P
Perfluoropetanesulfonic acid (PFPeS)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

21J1050

Page 1 of 1

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
Tighe & Bond
170 Front Street, Worcester, MA 01610
Phone: 508-754-7201
Princeton Private Well Sampling
Princeton, MA
Project Number: P-0534017
Project Manager: Jeff Arps/Michael Scherer
Pace Analytical Quote Name/Number
Invoice Recipient: Tighe & Bond
Sampled By: M Scherer

7-Day PFAS 10-Day (std) 10-Day Due Date:
1-Day 3-Day 4-Day
2-Day
Format: PDF EXCEL
Other: PCRB ONLY
CLP Like Data Pkg Required:
Email To: mjscherer@tighebond.com
Fax To #:

Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
Air-foot Pond Shallow	10/18/21	1200	GRAB	DW	U					
Air-foot Pond Deep	10/18/21	1200	GRAB	DW	U					

Preservation Codes:	Matrix Codes:	Other (please define)
I = Iced	GW = Ground Water	
H = HCL	WW = Waste Water	
M = Methanol	DW = Drinking Water	
N = Nitric Acid	A = Air	
S = Sulfuric Acid	S = Soil	
B = Sodium Bisulfate	SL = Sludge	
X = Sodium Hydroxide	SOL = Solid	
T = Sodium Thiosulfate	O = Other (please define)	
O = Other (please define)		

Client Comments: Please report the #4 compound list
30

Special Requirements:
AA MCP Required
MCP Certification Form Required
CT RCP Required
RCP Certification Form Required
MA State Div. Required

Project Entity:
Government
Federal
City

Municipality: 21 J
Brownfield

AMWRA
School
MBTA

WRTA
Chromatogram
AIHA-LAP, LLC

Relinquished by: (signature)
Date/Time: 10/19/21 10:15
Received by: (signature)
Date/Time: 10/19/21 15:50
Relinquished by: (signature)
Date/Time: 10/19/21 15:50
Received by: (signature)
Date/Time:
Relinquished by: (signature)
Date/Time:
Received by: (signature)
Date/Time:

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 - Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T E B

Received By GL Date 10/19/21 Time 1550

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____

Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

November 3, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

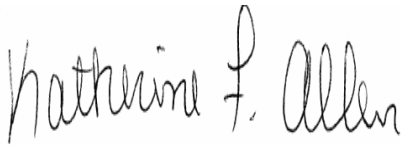
Project Location: School House Pond, Worcester, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1052

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 11/3/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1052

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: School House Pond, Worcester, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
School House Pond Shallow	21J1052-01	Drinking Water		SOP-454 PFAS	
School House Pond Deep	21J1052-02	Drinking Water		SOP-454 PFAS	
School House Pond FB	21J1052-03	Drinking Water		SOP-454 PFAS	
School House Pond EQ	21J1052-04	Drinking Water		SOP-454 PFAS	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SOP-454 PFAS

Qualifications:

Duplicate analysis confirmed Extracted Internal Standard failure due to matrix effects. Original results reported.

Analyte & Samples(s) Qualified:

d3-NMeFOSAA, d5-NEtFOSAA, M2PFTA, M7PFUnA, M8FOSA, MPFD_oA
21J1052-02[School House Pond Deep], 21J1052-01[School House Pond Shallow]

Extracted Internal Standard is outside of control limits.

Analyte & Samples(s) Qualified:

M2-4:2FTS, MPFBA
21J1052-03[School House Pond FB], 21J1052-04[School House Pond EQ], B293284-BSD1

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Technical Representative

Project Location: School House Pond, Worcester, M

Sample Description:

Work Order: 21J1052

Date Received: 10/19/2021

Field Sample #: School House Pond Shallow

Sampled: 10/18/2021 12:00

Sample ID: 21J1052-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date	Date/Time	Analyst
			MA	ORSG					Prepared	Analyzed	
Perfluorobutanoic acid (PFBA)	4.4	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluorobutanesulfonic acid (PFBS)	6.1	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluoropentanoic acid (PFPeA)	4.3	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluorohexanoic acid (PFHxA)	3.7	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
N-EtFOSAA	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
N-MeFOSAA	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluorooctanesulfonamide (FOSA)	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluorononanesulfonic acid (PFNS)	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluoro-1-butanefulfonamide (FBSA)	0.37	1.9			ng/L	1	J	SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluorohexanesulfonic acid (PFHxS)	43	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluoropentanesulfonic acid (PFPeS)	5.6	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluoroheptanoic acid (PFHpA)	2.4	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluorooctanoic acid (PFOA)	6.6	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluorooctanesulfonic acid (PFOS)	9.7	1.9			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH
Perfluorononanoic acid (PFNA)	0.70	1.9			ng/L	1	J	SOP-454 PFAS	10/27/21	10/28/21 20:14	BLH

Project Location: School House Pond, Worcester, M

Sample Description:

Work Order: 21J1052

Date Received: 10/19/2021

Field Sample #: School House Pond Deep

Sampled: 10/18/2021 12:00

Sample ID: 21J1052-02

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date	Date/Time	Analyst
			MA	ORSG					Prepared	Analyzed	
Perfluorobutanoic acid (PFBA)	4.7	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluorobutanesulfonic acid (PFBS)	6.6	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluoropentanoic acid (PFPeA)	3.9	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluorohexanoic acid (PFHxA)	3.9	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
11Cl-PF3OUdS (F53B Minor)	ND	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
9Cl-PF3ONS (F53B Major)	ND	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluorodecanoic acid (PFDA)	ND	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluorododecanoic acid (PFDoA)	ND	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluoroheptanesulfonic acid (PFHpS)	1.1	2.0			ng/L	1	J	SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
N-EtFOSAA	ND	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
N-MeFOSAA	ND	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluorotetradecanoic acid (PFTA)	ND	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluorooctanesulfonamide (FOSA)	ND	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluorononanesulfonic acid (PFNS)	ND	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluoro-1-butanefulfonamide (FBSA)	0.38	2.0			ng/L	1	J	SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluorohexanesulfonic acid (PFHxS)	45	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluoropentanesulfonic acid (PFPeS)	5.9	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluoroundecanoic acid (PFUnA)	ND	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluoroheptanoic acid (PFHpA)	2.1	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluorooctanoic acid (PFOA)	6.5	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluorooctanesulfonic acid (PFOS)	11	2.0			ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH
Perfluorononanoic acid (PFNA)	0.64	2.0			ng/L	1	J	SOP-454 PFAS	10/27/21	10/28/21 20:21	BLH

Project Location: School House Pond, Worcester, M

Sample Description:

Work Order: 21J1052

Date Received: 10/19/2021

Field Sample #: School House Pond FB

Sampled: 10/18/2021 12:00

Sample ID: 21J1052-03

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL		Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
			MA	ORSG						
Perfluorobutanoic acid (PFBA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluoropentanoic acid (PFPeA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
N-EtFOSAA	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
N-MeFOSAA	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluorooctanesulfonamide (FOSA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluorononanesulfonic acid (PFNS)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluoro-1-butanefulfonamide (FBSA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:28	BLH

Project Location: School House Pond, Worcester, M

Sample Description:

Work Order: 21J1052

Date Received: 10/19/2021

Field Sample #: School House Pond EQ

Sampled: 10/18/2021 12:00

Sample ID: 21J1052-04

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL		Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
			MA ORSG	Units						
Perfluorobutanoic acid (PFBA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluoropentanoic acid (PFPeA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
N-EtFOSAA	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
N-MeFOSAA	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluorooctanesulfonamide (FOSA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluorononanesulfonic acid (PFNS)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluoropentanesulfonic acid (PFPeS)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		SOP-454 PFAS	10/27/21	10/28/21 20:43	BLH

Sample Extraction Data

Prep Method: SOP 454-PFAAS-SOP-454 PFAS

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1052-01 [School House Pond Shallow]	B293284	259	1.00	10/27/21
21J1052-02 [School House Pond Deep]	B293284	246	1.00	10/27/21
21J1052-03 [School House Pond FB]	B293284	263	1.00	10/27/21
21J1052-04 [School House Pond EQ]	B293284	263	1.00	10/27/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B293284 - SOP 454-PFAAS

Blank (B293284-BLK1)

Prepared: 10/27/21 Analyzed: 10/28/21

Perfluorobutanoic acid (PFBA)	ND	2.1	ng/L
Perfluorobutanesulfonic acid (PFBS)	ND	2.1	ng/L
Perfluoropentanoic acid (PFPeA)	ND	2.1	ng/L
Perfluorohexanoic acid (PFHxA)	ND	2.1	ng/L
11Cl-PF3OUdS (F53B Minor)	ND	2.1	ng/L
9Cl-PF3ONS (F53B Major)	ND	2.1	ng/L
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.1	ng/L
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.1	ng/L
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.1	ng/L
Perfluorodecanoic acid (PFDA)	ND	2.1	ng/L
Perfluorododecanoic acid (PFDoA)	ND	2.1	ng/L
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	2.1	ng/L
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.1	ng/L
N-EtFOSAA	ND	2.1	ng/L
N-MeFOSAA	ND	2.1	ng/L
Perfluorotetradecanoic acid (PFTA)	ND	2.1	ng/L
Perfluorotridecanoic acid (PFTrDA)	ND	2.1	ng/L
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.1	ng/L
Perfluorodecanesulfonic acid (PFDS)	ND	2.1	ng/L
Perfluorooctanesulfonamide (FOSA)	ND	2.1	ng/L
Perfluorononanesulfonic acid (PFNS)	ND	2.1	ng/L
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.1	ng/L
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.1	ng/L
Perfluorohexanesulfonic acid (PFHxS)	ND	2.1	ng/L
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.1	ng/L
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.1	ng/L
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.1	ng/L
Perfluoropentanesulfonic acid (PFPeS)	ND	2.1	ng/L
Perfluoroundecanoic acid (PFUnA)	ND	2.1	ng/L
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.1	ng/L
Perfluoroheptanoic acid (PFHpA)	ND	2.1	ng/L
Perfluorooctanoic acid (PFOA)	ND	2.1	ng/L
Perfluorooctanesulfonic acid (PFOS)	ND	2.1	ng/L
Perfluorononanoic acid (PFNA)	ND	2.1	ng/L

LCS (B293284-BS1)

Prepared: 10/27/21 Analyzed: 10/28/21

Perfluorobutanoic acid (PFBA)	8.61	1.9	ng/L	9.73	88.5	73-129
Perfluorobutanesulfonic acid (PFBS)	7.99	1.9	ng/L	8.61	92.8	72-130
Perfluoropentanoic acid (PFPeA)	8.72	1.9	ng/L	9.73	89.6	72-129
Perfluorohexanoic acid (PFHxA)	8.67	1.9	ng/L	9.73	89.1	72-129
11Cl-PF3OUdS (F53B Minor)	7.72	1.9	ng/L	9.17	84.2	50-150
9Cl-PF3ONS (F53B Major)	7.60	1.9	ng/L	9.07	83.8	50-150
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	7.16	1.9	ng/L	9.17	78.1	50-150
Hexafluoropropylene oxide dimer acid (HFPO-DA)	7.78	1.9	ng/L	9.73	80.0	50-150
8:2 Fluorotelomersulfonic acid (8:2FTS A)	8.67	1.9	ng/L	9.34	92.8	67-138
Perfluorodecanoic acid (PFDA)	8.56	1.9	ng/L	9.73	87.9	71-129
Perfluorododecanoic acid (PFDoA)	9.05	1.9	ng/L	9.73	93.0	72-134
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	7.52	1.9	ng/L	8.66	86.8	50-150

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B293284 - SOP 454-PFAAS

LCS (B293284-BS1)

Prepared: 10/27/21 Analyzed: 10/28/21

Perfluoroheptanesulfonic acid (PFHpS)	9.13	1.9	ng/L	9.29		98.3	69-134			
N-EtFOSAA	10.9	1.9	ng/L	9.73		112	61-135			
N-MeFOSAA	10.6	1.9	ng/L	9.73		109	65-136			
Perfluorotetradecanoic acid (PFTA)	8.36	1.9	ng/L	9.73		85.9	71-132			
Perfluorotridecanoic acid (PFTTrDA)	8.99	1.9	ng/L	9.73		92.4	65-144			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	8.59	1.9	ng/L	9.10		94.5	63-143			
Perfluorodecanesulfonic acid (PFDS)	7.57	1.9	ng/L	9.39		80.6	53-142			
Perfluorooctanesulfonamide (FOSA)	8.39	1.9	ng/L	9.73		86.2	67-137			
Perfluorononanesulfonic acid (PFNS)	9.61	1.9	ng/L	9.34		103	69-127			
Perfluoro-1-hexanesulfonamide (FHxSA)	8.42	1.9	ng/L	9.73		86.6	50-150			
Perfluoro-1-butanesulfonamide (FBSA)	8.32	1.9	ng/L	9.73		85.5	50-150			
Perfluorohexanesulfonic acid (PFHxS)	8.42	1.9	ng/L	8.85		95.1	68-131			
Perfluoro-4-oxapentanoic acid (PFMPA)	7.83	1.9	ng/L	9.73		80.4	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	8.16	1.9	ng/L	9.73		83.8	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	8.83	1.9	ng/L	9.24		95.5	64-140			
Perfluoropentanesulfonic acid (PFPeS)	8.79	1.9	ng/L	9.15		96.1	71-127			
Perfluoroundecanoic acid (PFUnA)	8.63	1.9	ng/L	9.73		88.7	69-133			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	8.65	1.9	ng/L	9.73		88.9	50-150			
Perfluoroheptanoic acid (PFHpA)	8.21	1.9	ng/L	9.73		84.3	72-130			
Perfluorooctanoic acid (PFOA)	8.82	1.9	ng/L	9.73		90.6	71-133			
Perfluorooctanesulfonic acid (PFOS)	8.66	1.9	ng/L	9.00		96.2	65-140			
Perfluorononanoic acid (PFNA)	8.56	1.9	ng/L	9.73		87.9	69-130			

LCS Dup (B293284-BS1)

Prepared: 10/27/21 Analyzed: 10/28/21

Perfluorobutanoic acid (PFBA)	8.65	2.0	ng/L	10.0		86.1	73-129	0.444	30	
Perfluorobutanesulfonic acid (PFBS)	8.02	2.0	ng/L	8.89		90.2	72-130	0.400	30	
Perfluoropentanoic acid (PFPeA)	8.84	2.0	ng/L	10.0		88.0	72-129	1.30	30	
Perfluorohexanoic acid (PFHxA)	8.75	2.0	ng/L	10.0		87.1	72-129	0.893	30	
11Cl-PF3OUdS (F53B Minor)	8.49	2.0	ng/L	9.46		89.8	50-150	9.60	30	
9Cl-PF3ONS (F53B Major)	7.57	2.0	ng/L	9.36		80.8	50-150	0.387	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	6.96	2.0	ng/L	9.46		73.5	50-150	2.89	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	8.55	2.0	ng/L	10.0		85.1	50-150	9.37	30	
8:2 Fluorotelomersulfonic acid (8:2FTS A)	8.24	2.0	ng/L	9.64		85.5	67-138	5.07	30	
Perfluorodecanoic acid (PFDA)	8.40	2.0	ng/L	10.0		83.6	71-129	1.92	30	
Perfluorododecanoic acid (PFDoA)	9.14	2.0	ng/L	10.0		91.0	72-134	1.04	30	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	7.48	2.0	ng/L	8.94		83.6	50-150	0.547	30	
Perfluoroheptanesulfonic acid (PFHpS)	9.21	2.0	ng/L	9.59		96.0	69-134	0.855	30	
N-EtFOSAA	10.3	2.0	ng/L	10.0		102	61-135	5.81	30	
N-MeFOSAA	11.4	2.0	ng/L	10.0		114	65-136	7.24	30	
Perfluorotetradecanoic acid (PFTA)	8.01	2.0	ng/L	10.0		79.8	71-132	4.26	30	
Perfluorotridecanoic acid (PFTTrDA)	8.54	2.0	ng/L	10.0		85.0	65-144	5.08	30	
4:2 Fluorotelomersulfonic acid (4:2FTS A)	8.68	2.0	ng/L	9.39		92.4	63-143	0.962	30	
Perfluorodecanesulfonic acid (PFDS)	7.76	2.0	ng/L	9.69		80.0	53-142	2.45	30	
Perfluorooctanesulfonamide (FOSA)	8.98	2.0	ng/L	10.0		89.4	67-137	6.86	30	
Perfluorononanesulfonic acid (PFNS)	9.33	2.0	ng/L	9.64		96.8	69-127	2.93	30	
Perfluoro-1-hexanesulfonamide (FHxSA)	7.83	2.0	ng/L	10.0		77.9	50-150	7.36	30	
Perfluoro-1-butanesulfonamide (FBSA)	8.04	2.0	ng/L	10.0		80.0	50-150	3.41	30	
Perfluorohexanesulfonic acid (PFHxS)	7.99	2.0	ng/L	9.14		87.4	68-131	5.24	30	
Perfluoro-4-oxapentanoic acid (PFMPA)	7.78	2.0	ng/L	10.0		77.4	50-150	0.613	30	
Perfluoro-5-oxahexanoic acid (PFMBA)	8.19	2.0	ng/L	10.0		81.6	50-150	0.427	30	

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B293284 - SOP 454-PFAAS

LCS Dup (B293284-BS1)

Prepared: 10/27/21 Analyzed: 10/28/21

6:2 Fluorotelomersulfonic acid (6:2FTS A)	8.92	2.0	ng/L	9.54		93.5	64-140	1.08	30	
Perfluoropetanesulfonic acid (PFPeS)	8.41	2.0	ng/L	9.44		89.0	71-127	4.41	30	
Perfluoroundecanoic acid (PFUnA)	8.51	2.0	ng/L	10.0		84.7	69-133	1.44	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	8.76	2.0	ng/L	10.0		87.2	50-150	1.20	30	
Perfluoroheptanoic acid (PFHpA)	8.10	2.0	ng/L	10.0		80.6	72-130	1.31	30	
Perfluorooctanoic acid (PFOA)	8.85	2.0	ng/L	10.0		88.1	71-133	0.416	30	
Perfluorooctanesulfonic acid (PFOS)	8.51	2.0	ng/L	9.29		91.6	65-140	1.72	30	
Perfluorononanoic acid (PFNA)	8.90	2.0	ng/L	10.0		88.6	69-130	3.89	30	

Batch B293592 - SOP 454-PFAAS

Blank (B293592-BLK1)

Prepared: 10/29/21 Analyzed: 11/02/21

Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L							
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L							
Perfluoropentanoic acid (PFPeA)	ND	2.0	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	2.0	ng/L							
9Cl-PF3ONS (F53B Major)	ND	2.0	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	ng/L							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	ng/L							
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L							
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	2.0	ng/L							
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L							
N-EtFOSAA	ND	2.0	ng/L							
N-MeFOSAA	ND	2.0	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L							
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	ng/L							
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L							
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L							
Perfluorononanesulfonic acid (PFNS)	ND	2.0	ng/L							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	ng/L							
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L							
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	ng/L							
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	ng/L							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	ng/L							
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L							
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L							
Perfluorooctanoic acid (PFOA)	ND	2.0	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L							
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L							

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B293592 - SOP 454-PFAAS

LCS (B293592-BS1)

Prepared: 10/29/21 Analyzed: 11/02/21

Perfluorobutanoic acid (PFBA)	7.89	2.0	ng/L	9.83		80.2	73-129			
Perfluorobutanesulfonic acid (PFBS)	7.15	2.0	ng/L	8.70		82.2	72-130			
Perfluoropentanoic acid (PFPeA)	7.91	2.0	ng/L	9.83		80.5	72-129			
Perfluorohexanoic acid (PFHxA)	8.13	2.0	ng/L	9.83		82.7	72-129			
11Cl-PF3OUdS (F53B Minor)	6.28	2.0	ng/L	9.26		67.8	50-150			
9Cl-PF3ONS (F53B Major)	6.09	2.0	ng/L	9.16		66.4	50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	7.13	2.0	ng/L	9.26		77.0	50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	7.01	2.0	ng/L	9.83		71.3	50-150			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	6.53	2.0	ng/L	9.44		69.2	67-138			
Perfluorodecanoic acid (PFDA)	8.31	2.0	ng/L	9.83		84.6	71-129			
Perfluorododecanoic acid (PFDoA)	8.01	2.0	ng/L	9.83		81.5	72-134			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	7.09	2.0	ng/L	8.75		81.0	50-150			
Perfluoroheptanesulfonic acid (PFHpS)	7.99	2.0	ng/L	9.39		85.1	69-134			
N-EtFOSAA	9.87	2.0	ng/L	9.83		100	61-135			
N-MeFOSAA	11.0	2.0	ng/L	9.83		112	65-136			
Perfluorotetradecanoic acid (PFTA)	7.62	2.0	ng/L	9.83		77.5	71-132			
Perfluorotridecanoic acid (PFTrDA)	8.07	2.0	ng/L	9.83		82.1	65-144			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	7.47	2.0	ng/L	9.19		81.3	63-143			
Perfluorodecanesulfonic acid (PFDS)	7.37	2.0	ng/L	9.49		77.7	53-142			
Perfluorooctanesulfonamide (FOSA)	7.96	2.0	ng/L	9.83		80.9	67-137			
Perfluorononanesulfonic acid (PFNS)	7.59	2.0	ng/L	9.44		80.5	69-127			
Perfluoro-1-hexanesulfonamide (FHxSA)	7.12	2.0	ng/L	9.83		72.4	50-150			
Perfluoro-1-butanefulfonamide (FBSA)	7.77	2.0	ng/L	9.83		79.0	50-150			
Perfluorohexanesulfonic acid (PFHxS)	7.47	2.0	ng/L	8.95		83.5	68-131			
Perfluoro-4-oxapentanoic acid (PFMPA)	7.36	2.0	ng/L	9.83		74.8	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	7.36	2.0	ng/L	9.83		74.8	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	7.77	2.0	ng/L	9.34		83.1	64-140			
Perfluoropentanesulfonic acid (PFPeS)	6.95	2.0	ng/L	9.24		75.2	71-127			
Perfluoroundecanoic acid (PFUnA)	8.00	2.0	ng/L	9.83		81.4	69-133			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	7.67	2.0	ng/L	9.83		78.0	50-150			
Perfluoroheptanoic acid (PFHpA)	7.40	2.0	ng/L	9.83		75.3	72-130			
Perfluorooctanoic acid (PFOA)	7.97	2.0	ng/L	9.83		81.1	71-133			
Perfluorooctanesulfonic acid (PFOS)	7.45	2.0	ng/L	9.10		81.9	65-140			
Perfluorononanoic acid (PFNA)	7.85	2.0	ng/L	9.83		79.9	69-130			

LCS Dup (B293592-BS1)

Prepared: 10/29/21 Analyzed: 11/02/21

Perfluorobutanoic acid (PFBA)	7.33	1.9	ng/L	9.56		76.6	73-129	7.35	30	
Perfluorobutanesulfonic acid (PFBS)	6.77	1.9	ng/L	8.46		80.1	72-130	5.42	30	
Perfluoropentanoic acid (PFPeA)	7.39	1.9	ng/L	9.56		77.3	72-129	6.88	30	
Perfluorohexanoic acid (PFHxA)	7.54	1.9	ng/L	9.56		78.9	72-129	7.53	30	
11Cl-PF3OUdS (F53B Minor)	6.53	1.9	ng/L	9.01		72.5	50-150	3.94	30	
9Cl-PF3ONS (F53B Major)	5.87	1.9	ng/L	8.91		65.9	50-150	3.61	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	6.44	1.9	ng/L	9.01		71.5	50-150	10.1	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	6.99	1.9	ng/L	9.56		73.1	50-150	0.338	30	
8:2 Fluorotelomersulfonic acid (8:2FTS A)	7.12	1.9	ng/L	9.18		77.6	67-138	8.64	30	
Perfluorodecanoic acid (PFDA)	7.34	1.9	ng/L	9.56		76.8	71-129	12.5	30	
Perfluorododecanoic acid (PFDoA)	7.43	1.9	ng/L	9.56		77.8	72-134	7.49	30	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	6.53	1.9	ng/L	8.51		76.8	50-150	8.14	30	

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B293592 - SOP 454-PFAAS

LCS Dup (B293592-BSD1)

Prepared: 10/29/21 Analyzed: 11/02/21

Perfluoroheptanesulfonic acid (PFHpS)	7.58	1.9	ng/L	9.13		83.0	69-134	5.25	30	
N-EtFOSAA	9.36	1.9	ng/L	9.56		97.9	61-135	5.28	30	
N-MeFOSAA	10.3	1.9	ng/L	9.56		108	65-136	6.89	30	
Perfluorotetradecanoic acid (PFTA)	7.76	1.9	ng/L	9.56		81.1	71-132	1.71	30	
Perfluorotridecanoic acid (PFTrDA)	7.46	1.9	ng/L	9.56		78.0	65-144	7.87	30	
4:2 Fluorotelomersulfonic acid (4:2FTS A)	7.08	1.9	ng/L	8.94		79.2	63-143	5.45	30	
Perfluorodecanesulfonic acid (PFDS)	6.42	1.9	ng/L	9.23		69.6	53-142	13.8	30	
Perfluorooctanesulfonamide (FOSA)	7.52	1.9	ng/L	9.56		78.7	67-137	5.62	30	
Perfluorononanesulfonic acid (PFNS)	7.77	1.9	ng/L	9.18		84.7	69-127	2.34	30	
Perfluoro-1-hexanesulfonamide (FHxSA)	6.92	1.9	ng/L	9.56		72.4	50-150	2.85	30	
Perfluoro-1-butanesulfonamide (FBSA)	7.41	1.9	ng/L	9.56		77.5	50-150	4.75	30	
Perfluorohexanesulfonic acid (PFHxS)	6.94	1.9	ng/L	8.70		79.8	68-131	7.42	30	
Perfluoro-4-oxapentanoic acid (PFMPA)	6.89	1.9	ng/L	9.56		72.1	50-150	6.55	30	
Perfluoro-5-oxahexanoic acid (PFMBA)	6.88	1.9	ng/L	9.56		72.0	50-150	6.62	30	
6:2 Fluorotelomersulfonic acid (6:2FTS A)	7.52	1.9	ng/L	9.08		82.8	64-140	3.26	30	
Perfluoropetanesulfonic acid (PFPeS)	7.04	1.9	ng/L	8.99		78.3	71-127	1.28	30	
Perfluoroundecanoic acid (PFUnA)	6.90	1.9	ng/L	9.56		72.2	69-133	14.7	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	7.12	1.9	ng/L	9.56		74.4	50-150	7.49	30	
Perfluoroheptanoic acid (PFHpA)	7.00	1.9	ng/L	9.56		73.3	72-130	5.54	30	
Perfluorooctanoic acid (PFOA)	7.26	1.9	ng/L	9.56		76.0	71-133	9.29	30	
Perfluorooctanesulfonic acid (PFOS)	7.50	1.9	ng/L	8.84		84.8	65-140	0.678	30	
Perfluorononanoic acid (PFNA)	7.56	1.9	ng/L	9.56		79.1	69-130	3.84	30	

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
PF-19	Duplicate analysis confirmed Extracted Internal Standard failure due to matrix effects. Original results reported.
S-29	Extracted Internal Standard is outside of control limits.

ANALYST

RAP Raisa A. Petraitis
STATION PDF Management Station
JFC James F. Constantino
JLH Jessica L. Hoffman
EGR Evett G Rivera
BB2 Bethany M Bisnett
BAA Bonita A. Abanulo

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
School House Pond Shallow (21J1052-01)			Lab File ID: 21J1052-01.d			Analyzed: 10/28/21 20:14			
M8FOSA	168457.6	4.0605	362,634.00	4.060517	46	50 - 150	0.0000	+/-0.50	*
M2-4:2FTS	162648.8	2.58715	159,245.00	2.595367	102	50 - 150	-0.0082	+/-0.50	
M2PFTA	378193.1	4.370283	1,333,856.00	4.378417	28	50 - 150	-0.0081	+/-0.50	*
M2-8:2FTS	178652.9	3.850917	172,307.00	3.850933	104	50 - 150	0.0000	+/-0.50	
MPFBA	411166.6	1.0917	602,130.00	1.100017	68	50 - 150	-0.0083	+/-0.50	
M3HFPO-DA	231348.8	2.91295	233,032.00	2.921133	99	50 - 150	-0.0082	+/-0.50	
M6PFDA	991517	3.851417	866,885.00	3.843467	114	50 - 150	0.0080	+/-0.50	
M3PFBS	173360.8	1.969733	140,103.00	1.978033	124	50 - 150	-0.0083	+/-0.50	
M7PFUnA	1102916	3.993983	1,171,547.00	3.994	94	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	146199.9	3.493333	105,518.00	3.493333	139	50 - 150	0.0000	+/-0.50	
M5PFPeA	722055.9	1.7743	605,473.00	1.791367	119	50 - 150	-0.0171	+/-0.50	
M5PFHxA	1041000	2.672333	822,147.00	2.680533	127	50 - 150	-0.0082	+/-0.50	
M3PFHxS	119684.9	3.266833	106,348.00	3.266833	113	50 - 150	0.0000	+/-0.50	
M4PFHpA	1028078	3.2357	792,703.00	3.2357	130	50 - 150	0.0000	+/-0.50	
M8PFOA	908062.9	3.50185	827,978.00	3.51015	110	50 - 150	-0.0083	+/-0.50	
M8PFOS	129105	3.692083	124,628.00	3.692083	104	50 - 150	0.0000	+/-0.50	
M9PFNA	838153.3	3.693117	806,227.00	3.693117	104	50 - 150	0.0000	+/-0.50	
MPFDoA	774865.3	4.128783	1,177,447.00	4.1288	66	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	200946.5	4.001467	229,719.00	4.001467	87	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	250507.4	3.921883	269,307.00	3.921883	93	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
School House Pond Deep (21J1052-02)			Lab File ID: 21J1052-02.d			Analyzed: 10/28/21 20:21			
M8FOSA	54756.29	4.060534	362,634.00	4.060517	15	50 - 150	0.0000	+/-0.50	*
M2-4:2FTS	142489.3	2.587167	159,245.00	2.595367	89	50 - 150	-0.0082	+/-0.50	
M2PFTA	606869.2	4.370317	1,333,856.00	4.378417	45	50 - 150	-0.0081	+/-0.50	*
M2-8:2FTS	123413.4	3.850933	172,307.00	3.850933	72	50 - 150	0.0000	+/-0.50	
MPFBA	411385.1	1.100017	602,130.00	1.100017	68	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	223889.6	2.91295	233,032.00	2.921133	96	50 - 150	-0.0082	+/-0.50	
M6PFDA	701981.9	3.851433	866,885.00	3.843467	81	50 - 150	0.0080	+/-0.50	
M3PFBS	165079.6	1.969733	140,103.00	1.978033	118	50 - 150	-0.0083	+/-0.50	
M7PFUnA	539433.9	3.994017	1,171,547.00	3.994	46	50 - 150	0.0000	+/-0.50	*
M2-6:2FTS	127463.1	3.49335	105,518.00	3.493333	121	50 - 150	0.0000	+/-0.50	
M5PFPeA	696959.8	1.7743	605,473.00	1.791367	115	50 - 150	-0.0171	+/-0.50	
M5PFHxA	1006292	2.672333	822,147.00	2.680533	122	50 - 150	-0.0082	+/-0.50	
M3PFHxS	114191.7	3.266833	106,348.00	3.266833	107	50 - 150	0.0000	+/-0.50	
M4PFHpA	1003263	3.2357	792,703.00	3.2357	127	50 - 150	0.0000	+/-0.50	
M8PFOA	907895.1	3.510167	827,978.00	3.51015	110	50 - 150	0.0000	+/-0.50	
M8PFOS	100202.4	3.692083	124,628.00	3.692083	80	50 - 150	0.0000	+/-0.50	
M9PFNA	758135.3	3.693117	806,227.00	3.693117	94	50 - 150	0.0000	+/-0.50	
MPFDoA	414884.9	4.128817	1,177,447.00	4.1288	35	50 - 150	0.0000	+/-0.50	*
d5-NEtFOSAA	97345.03	4.001483	229,719.00	4.001467	42	50 - 150	0.0000	+/-0.50	*
d3-NMeFOSAA	126703	3.9219	269,307.00	3.921883	47	50 - 150	0.0000	+/-0.50	*

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
School House Pond FB (21J1052-03)			Lab File ID: 21J1052-03.d			Analyzed: 10/28/21 20:28			
M8FOSA	324432.6	4.060517	362,634.00	4.060517	89	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	66723.78	2.595367	159,245.00	2.595367	42	50 - 150	0.0000	+/-0.50	*
M2PFTA	1197411	4.378417	1,333,856.00	4.378417	90	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	120144.4	3.850933	172,307.00	3.850933	70	50 - 150	0.0000	+/-0.50	
MPFBA	767446.9	1.108317	602,130.00	1.100017	127	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	297304.4	2.921133	233,032.00	2.921133	128	50 - 150	0.0000	+/-0.50	
M6PFDA	879916.6	3.851433	866,885.00	3.843467	102	50 - 150	0.0080	+/-0.50	
M3PFBS	158656.4	1.986217	140,103.00	1.978033	113	50 - 150	0.0082	+/-0.50	
M7PFUnA	1141138	3.994	1,171,547.00	3.994	97	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	54866.23	3.493333	105,518.00	3.493333	52	50 - 150	0.0000	+/-0.50	
M5PFPeA	722206.1	1.791367	605,473.00	1.791367	119	50 - 150	0.0000	+/-0.50	
M5PFHxA	965742.6	2.68875	822,147.00	2.680533	117	50 - 150	0.0082	+/-0.50	
M3PFHxS	111852	3.266817	106,348.00	3.266833	105	50 - 150	0.0000	+/-0.50	
M4PFHpA	972067.4	3.2357	792,703.00	3.2357	123	50 - 150	0.0000	+/-0.50	
M8PFOA	888571	3.510167	827,978.00	3.51015	107	50 - 150	0.0000	+/-0.50	
M8PFOS	130965.8	3.692083	124,628.00	3.692083	105	50 - 150	0.0000	+/-0.50	
M9PFNA	793009.1	3.693117	806,227.00	3.693117	98	50 - 150	0.0000	+/-0.50	
MPFDoA	1053204	4.136833	1,177,447.00	4.1288	89	50 - 150	0.0080	+/-0.50	
d5-NEtFOSAA	200584	4.001467	229,719.00	4.001467	87	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	241970.7	3.9219	269,307.00	3.921883	90	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
School House Pond EQ (21J1052-04)			Lab File ID: 21J1052-04.d			Analyzed: 10/28/21 20:43			
M8FOSA	338707.4	4.060517	362,634.00	4.060517	93	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	66820.25	2.595367	159,245.00	2.595367	42	50 - 150	0.0000	+/-0.50	*
M2PF _{TA}	1328116	4.3703	1,333,856.00	4.3703	100	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	118559.6	3.850933	172,307.00	3.850933	69	50 - 150	0.0000	+/-0.50	
MPF _{BA}	801502.3	1.108317	602,130.00	1.100017	133	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	292615.3	2.921133	233,032.00	2.921133	126	50 - 150	0.0000	+/-0.50	
M6PF _{DA}	988963.7	3.851433	866,885.00	3.851433	114	50 - 150	0.0000	+/-0.50	
M3PF _{BS}	163634.8	1.986217	140,103.00	1.978033	117	50 - 150	0.0082	+/-0.50	
M7PF _{UnA}	1166854	3.994	1,171,547.00	3.994	100	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	56391.49	3.493333	105,518.00	3.49335	53	50 - 150	0.0000	+/-0.50	
M5PF _{PeA}	746211.6	1.791367	605,473.00	1.791367	123	50 - 150	0.0000	+/-0.50	
M5PF _{HxA}	1019945	2.68875	822,147.00	2.680533	124	50 - 150	0.0082	+/-0.50	
M3PF _{HxS}	122361	3.266833	106,348.00	3.266833	115	50 - 150	0.0000	+/-0.50	
M4PF _{HpA}	1026692	3.2357	792,703.00	3.2357	130	50 - 150	0.0000	+/-0.50	
M8PF _{OA}	925846.5	3.510167	827,978.00	3.510167	112	50 - 150	0.0000	+/-0.50	
M8PF _{OS}	139359.9	3.692083	124,628.00	3.692083	112	50 - 150	0.0000	+/-0.50	
M9PF _{NA}	787363.8	3.693133	806,227.00	3.693133	98	50 - 150	0.0000	+/-0.50	
MPF _{DoA}	1126156	4.1288	1,177,447.00	4.136833	96	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	207832.8	4.001467	229,719.00	4.001483	90	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	257280.5	3.9219	269,307.00	3.9219	96	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B293284-BLK1)									
			Lab File ID: B293284-BLK1.d			Analyzed: 10/28/21 19:52			
M8FOSA	339836.3	4.060517	362,634.00	4.060517	94	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	157171.5	2.595367	159,245.00	2.595367	99	50 - 150	0.0000	+/-0.50	
M2PFTA	1346891	4.3703	1,333,856.00	4.378417	101	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	176210.1	3.850933	172,307.00	3.850933	102	50 - 150	0.0000	+/-0.50	
MPFBA	862798.8	1.100017	602,130.00	1.100017	143	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	250705.5	2.921133	233,032.00	2.921133	108	50 - 150	0.0000	+/-0.50	
M6PFDA	995256.3	3.843467	866,885.00	3.843467	115	50 - 150	0.0000	+/-0.50	
M3PFBS	177421.6	1.978033	140,103.00	1.978033	127	50 - 150	0.0000	+/-0.50	
M7PFUnA	1260513	3.994	1,171,547.00	3.994	108	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	104268.6	3.49335	105,518.00	3.493333	99	50 - 150	0.0000	+/-0.50	
M5PFPeA	819237.2	1.791367	605,473.00	1.791367	135	50 - 150	0.0000	+/-0.50	
M5PFHxA	1064753	2.68875	822,147.00	2.680533	130	50 - 150	0.0082	+/-0.50	
M3PFHxS	128157.2	3.266833	106,348.00	3.266833	121	50 - 150	0.0000	+/-0.50	
M4PFHpA	1067473	3.2357	792,703.00	3.2357	135	50 - 150	0.0000	+/-0.50	
M8PFOA	987711.8	3.510167	827,978.00	3.51015	119	50 - 150	0.0000	+/-0.50	
M8PFOS	135482.6	3.692083	124,628.00	3.692083	109	50 - 150	0.0000	+/-0.50	
M9PFNA	880795.9	3.693117	806,227.00	3.693117	109	50 - 150	0.0000	+/-0.50	
MPFDoA	1139333	4.1288	1,177,447.00	4.1288	97	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	217502.9	4.001467	229,719.00	4.001467	95	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	255533.9	3.921883	269,307.00	3.921883	95	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B293284-BS1)									
			Lab File ID: B293284-BS1.d			Analyzed: 10/28/21 19:38			
M8FOSA	378890.5	4.060517	362,634.00	4.060517	104	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	138838	2.595383	159,245.00	2.595367	87	50 - 150	0.0000	+/-0.50	
M2PFTA	1355808	4.378417	1,333,856.00	4.378417	102	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	163839.9	3.850933	172,307.00	3.850933	95	50 - 150	0.0000	+/-0.50	
MPFBA	898888	1.100017	602,130.00	1.100017	149	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	297471.8	2.921133	233,032.00	2.921133	128	50 - 150	0.0000	+/-0.50	
M6PFDA	1082756	3.843467	866,885.00	3.843467	125	50 - 150	0.0000	+/-0.50	
M3PFBS	183110.4	1.978033	140,103.00	1.978033	131	50 - 150	0.0000	+/-0.50	
M7PFUnA	1352255	3.994	1,171,547.00	3.994	115	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	99605.43	3.49335	105,518.00	3.493333	94	50 - 150	0.0000	+/-0.50	
M5PFPeA	846608.4	1.791367	605,473.00	1.791367	140	50 - 150	0.0000	+/-0.50	
M5PFHxA	1112695	2.688767	822,147.00	2.680533	135	50 - 150	0.0082	+/-0.50	
M3PFHxS	128990.2	3.266833	106,348.00	3.266833	121	50 - 150	0.0000	+/-0.50	
M4PFHpA	1106522	3.2357	792,703.00	3.2357	140	50 - 150	0.0000	+/-0.50	
M8PFOA	981974.3	3.510167	827,978.00	3.51015	119	50 - 150	0.0000	+/-0.50	
M8PFOS	146306.2	3.692083	124,628.00	3.692083	117	50 - 150	0.0000	+/-0.50	
M9PFNA	928009.6	3.693117	806,227.00	3.693117	115	50 - 150	0.0000	+/-0.50	
MPFDoA	1208880	4.136817	1,177,447.00	4.1288	103	50 - 150	0.0080	+/-0.50	
d5-NEtFOSAA	228297.5	4.001467	229,719.00	4.001467	99	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	286627.6	3.9219	269,307.00	3.921883	106	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS Dup (B293284-BSD1)									
			Lab File ID: B293284-BSD1.d			Analyzed: 10/28/21 19:45			
M8FOSA	386030.9	4.060517	362,634.00	4.060517	106	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	158393.5	2.595383	159,245.00	2.595367	99	50 - 150	0.0000	+/-0.50	
M2PF _{TA}	1566244	4.3703	1,333,856.00	4.378417	117	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	187382.2	3.850933	172,307.00	3.850933	109	50 - 150	0.0000	+/-0.50	
MPFBA	937921.1	1.100017	602,130.00	1.100017	156	50 - 150	0.0000	+/-0.50	*
M3HFPO-DA	302243.4	2.921133	233,032.00	2.921133	130	50 - 150	0.0000	+/-0.50	
M6PFDA	1197391	3.843467	866,885.00	3.843467	138	50 - 150	0.0000	+/-0.50	
M3PFBS	189456.9	1.986217	140,103.00	1.978033	135	50 - 150	0.0082	+/-0.50	
M7PFU _{nA}	1406791	3.994	1,171,547.00	3.994	120	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	109872.8	3.49335	105,518.00	3.493333	104	50 - 150	0.0000	+/-0.50	
M5PFPeA	874755	1.791367	605,473.00	1.791367	144	50 - 150	0.0000	+/-0.50	
M5PFH _x A	1161306	2.688767	822,147.00	2.680533	141	50 - 150	0.0082	+/-0.50	
M3PFH _x S	136449.3	3.266833	106,348.00	3.266833	128	50 - 150	0.0000	+/-0.50	
M4PFH _p A	1154954	3.2357	792,703.00	3.2357	146	50 - 150	0.0000	+/-0.50	
M8PFOA	1062348	3.510167	827,978.00	3.51015	128	50 - 150	0.0000	+/-0.50	
M8PFOS	146980.3	3.692083	124,628.00	3.692083	118	50 - 150	0.0000	+/-0.50	
M9PFNA	932996.1	3.693117	806,227.00	3.693117	116	50 - 150	0.0000	+/-0.50	
MPFD _o A	1388857	4.1288	1,177,447.00	4.1288	118	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	253443.6	4.001467	229,719.00	4.001467	110	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	300769.3	3.9219	269,307.00	3.921883	112	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B293592-BLK1)			Lab File ID: B293592-BLK1.d			Analyzed: 11/02/21 22:28			
M8FOSA	428780.8	4.052516	428,241.00	4.052516	100	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	182876.3	2.644867	176,628.00	2.644867	104	50 - 150	0.0000	+/-0.50	
M2PFTA	1081897	4.394667	1,620,972.00	4.394667	67	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	201150.2	3.86685	189,958.00	3.866833	106	50 - 150	0.0000	+/-0.50	
MPFBA	984792.1	1.12495	732,834.00	1.12495	134	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	280692.7	2.954083	264,291.00	2.954083	106	50 - 150	0.0000	+/-0.50	
M6PFDA	1312455	3.867333	1,025,629.00	3.867333	128	50 - 150	0.0000	+/-0.50	
M3PFBS	199351.7	2.02765	160,875.00	2.019367	124	50 - 150	0.0083	+/-0.50	
M7PFUnA	1673391	4.017967	1,429,690.00	4.017967	117	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	130865.4	3.517617	120,758.00	3.517617	108	50 - 150	0.0000	+/-0.50	
M5PFPeA	939765.7	1.8328	737,475.00	1.8328	127	50 - 150	0.0000	+/-0.50	
M5PFHxA	1286390	2.73905	1,001,537.00	2.730867	128	50 - 150	0.0082	+/-0.50	
M3PFHxS	153723.8	3.2923	126,265.00	3.2923	122	50 - 150	0.0000	+/-0.50	
M4PFHpA	1250234	3.25995	995,204.00	3.25995	126	50 - 150	0.0000	+/-0.50	
M8PFOA	1277643	3.526133	1,012,893.00	3.526133	126	50 - 150	0.0000	+/-0.50	
M8PFOS	179711.4	3.7083	146,568.00	3.708283	123	50 - 150	0.0000	+/-0.50	
M9PFNA	1295095	3.709283	984,965.00	3.709283	131	50 - 150	0.0000	+/-0.50	
MPFDoA	1627821	4.153133	1,373,461.00	4.153133	119	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	285329.4	4.02545	280,692.00	4.02545	102	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	336710.8	3.945867	287,946.00	3.945867	117	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B293592-BS1)			Lab File ID: B293592-BS1.d			Analyzed: 11/02/21 22:13			
M8FOSA	439349.6	4.052516	428,241.00	4.052516	103	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	173746.3	2.644867	176,628.00	2.644867	98	50 - 150	0.0000	+/-0.50	
M2PFTA	1635820	4.394667	1,620,972.00	4.394667	101	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	205111.3	3.86685	189,958.00	3.866833	108	50 - 150	0.0000	+/-0.50	
MPFBA	947305.7	1.12495	732,834.00	1.12495	129	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	299891	2.954083	264,291.00	2.954083	113	50 - 150	0.0000	+/-0.50	
M6PFDA	1201900	3.867333	1,025,629.00	3.867333	117	50 - 150	0.0000	+/-0.50	
M3PFBS	191459	2.02765	160,875.00	2.019367	119	50 - 150	0.0083	+/-0.50	
M7PFUnA	1554933	4.017983	1,429,690.00	4.017967	109	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	124903.5	3.517617	120,758.00	3.517617	103	50 - 150	0.0000	+/-0.50	
M5PFPeA	894245.8	1.8328	737,475.00	1.8328	121	50 - 150	0.0000	+/-0.50	
M5PFHxA	1226630	2.73905	1,001,537.00	2.730867	122	50 - 150	0.0082	+/-0.50	
M3PFHxS	156229	3.2923	126,265.00	3.2923	124	50 - 150	0.0000	+/-0.50	
M4PFHpA	1205740	3.25995	995,204.00	3.25995	121	50 - 150	0.0000	+/-0.50	
M8PFOA	1235728	3.52615	1,012,893.00	3.526133	122	50 - 150	0.0000	+/-0.50	
M8PFOS	177797.8	3.7083	146,568.00	3.708283	121	50 - 150	0.0000	+/-0.50	
M9PFNA	1201331	3.709283	984,965.00	3.709283	122	50 - 150	0.0000	+/-0.50	
MPFDoA	1595567	4.153133	1,373,461.00	4.153133	116	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	275076.3	4.02545	280,692.00	4.02545	98	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	318454.6	3.945867	287,946.00	3.945867	111	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS Dup (B293592-BSD1)									
			Lab File ID: B293592-BSD1.d			Analyzed: 11/02/21 22:21			
M8FOSA	511100.3	4.052516	428,241.00	4.052516	119	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	199371.8	2.644867	176,628.00	2.644867	113	50 - 150	0.0000	+/-0.50	
M2PFTA	1853746	4.394667	1,620,972.00	4.394667	114	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	217350	3.86685	189,958.00	3.866833	114	50 - 150	0.0000	+/-0.50	
MPFBA	1072361	1.12495	732,834.00	1.12495	146	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	317562.1	2.954083	264,291.00	2.954083	120	50 - 150	0.0000	+/-0.50	
M6PFDA	1340522	3.867333	1,025,629.00	3.867333	131	50 - 150	0.0000	+/-0.50	
M3PFBS	220888.7	2.019367	160,875.00	2.019367	137	50 - 150	0.0000	+/-0.50	
M7PFUnA	1800183	4.017983	1,429,690.00	4.017967	126	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	134482.9	3.517617	120,758.00	3.517617	111	50 - 150	0.0000	+/-0.50	
M5PFPeA	1016936	1.8328	737,475.00	1.8328	138	50 - 150	0.0000	+/-0.50	
M5PFHxA	1391533	2.73905	1,001,537.00	2.730867	139	50 - 150	0.0082	+/-0.50	
M3PFHxS	169977.1	3.2923	126,265.00	3.2923	135	50 - 150	0.0000	+/-0.50	
M4PFHpA	1390792	3.25995	995,204.00	3.25995	140	50 - 150	0.0000	+/-0.50	
M8PFOA	1405918	3.52615	1,012,893.00	3.526133	139	50 - 150	0.0000	+/-0.50	
M8PFOS	190121.4	3.7083	146,568.00	3.708283	130	50 - 150	0.0000	+/-0.50	
M9PFNA	1339221	3.709283	984,965.00	3.709283	136	50 - 150	0.0000	+/-0.50	
MPFDoA	1773394	4.153133	1,373,461.00	4.153133	129	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	309208	4.02545	280,692.00	4.02545	110	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	365928.7	3.945867	287,946.00	3.945867	127	50 - 150	0.0000	+/-0.50	

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S064822-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	439	0.9146863	0.8522681		-12.2	30
Perfluorobutanesulfonic acid (PFBS)	A	444	412	1.040273	0.9960718		-7.3	30
Perfluoropentanoic acid (PFPeA)	A	500	455	0.9690369	0.9306022		-9.0	30
Perfluorohexanoic acid (PFHxA)	A	500	446	0.8795644	0.8254836		-10.8	30
11Cl-PF3OUdS (F53B Minor)	A	472	453	1.927545	2.00158		-4.0	30
9Cl-PF3ONS (F53B Major)	A	466	367	4.280411	3.903187		-21.2	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	386	1.813604	1.603667		-18.3	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	427	0.1571587	0.1360126		-14.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	411	0.8640553	0.8470935		-14.4	30
Perfluorodecanoic acid (PFDA)	A	500	402	0.9325406	0.8101371		-19.6	30
Perfluorododecanoic acid (PFDoA)	A	500	433	0.9617566	0.8966043		-13.3	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	385	4.233439	3.81482		-13.4	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	486	0.4771225	0.5151391		2.2	30
N-EtFOSAA	A	500	433	0.9116763	0.8605043		-13.4	30
N-MeFOSAA	A	500	438	0.8782699	0.7963218		-12.5	30
Perfluorotetradecanoic acid (PFTA)	A	500	419	0.9335956	0.8789884		-16.3	30
Perfluorotridecanoic acid (PFTrDA)	A	500	430	1.096096	1.077487		-13.9	30
Perfluorodecanesulfonic acid (PFDS)	A	482	405	0.6687577	0.5695678		-15.9	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	415	1.111174	1.102686		-11.4	30
Perfluorooctanesulfonamide (FOSA)	A	500	443	0.879319	0.8199872		-11.3	30
Perfluorononanesulfonic acid (PFNS)	A	481	511	0.3406347	0.3567931		6.3	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	438	0.3911006	0.3611517		-12.3	30
Perfluoro-1-butanefulfonamide (FBSA)	A	500	426	0.3387278	0.2999466		-14.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	456	0.995535	1.026257		-0.2	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	417	0.5384319	0.4822581		-16.6	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	422	0.6322055	0.5694019		-15.6	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	399	0.9922045	0.9348154		-16.2	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	437	1.046291	1.00851		-7.0	30
Perfluoroundecanoic acid (PFUnA)	A	500	412	0.8863898	0.7774105		-17.6	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	437	0.3536044	0.3303644		-12.5	30
Perfluoroheptanoic acid (PFHpA)	A	500	439	1.038024	0.9372174		-12.2	30
Perfluorooctanoic acid (PFOA)	A	500	430	0.9234623	0.8412049		-13.9	30
Perfluorooctanesulfonic acid (PFOS)	A	464	362	0.9738652	0.7786045		-22.0	30
Perfluorononanoic acid (PFNA)	A	500	462	0.9601163	0.9270417		-7.7	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S064822-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2490	0.9146863	0.9668455		-0.4	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2280	1.040273	1.101018		2.5	30
Perfluoropentanoic acid (PFPeA)	A	2500	2540	0.9690369	1.039321		1.6	30
Perfluorohexanoic acid (PFHxA)	A	2500	2500	0.8795644	0.9241933		-0.09	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2500	1.927545	2.206124		6.0	30
9Cl-PF3ONS (F53B Major)	A	2330	2170	4.280411	4.598715		-6.9	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2090	1.813604	1.738746		-11.4	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2460	0.1571587	0.1574421		-1.4	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2750	0.8640553	1.116764		14.7	30
Perfluorodecanoic acid (PFDA)	A	2500	2430	0.9325406	0.9811202		-2.6	30
Perfluorododecanoic acid (PFDoA)	A	2500	2250	0.9617566	0.9310768		-10.0	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2210	4.233439	4.403766		-0.3	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2780	0.4771225	0.5852696		16.9	30
N-EtFOSAA	A	2500	2590	0.9116763	1.030514		3.7	30
N-MeFOSAA	A	2500	3010	0.8782699	1.093908		20.2	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2350	0.9335956	0.9825763		-5.9	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2210	1.096096	1.09923		-11.6	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2480	1.111174	1.300334		6.0	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2500	0.6687577	0.7010844		3.5	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2520	0.879319	0.9331945		0.9	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2820	0.3406347	0.3949919		17.7	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2450	0.3911006	0.4031292		-2.1	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2490	0.3387278	0.3504165		-0.4	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2260	0.995535	1.018252		-1.0	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2350	0.5384319	0.5444878		-5.9	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2400	0.6322055	0.6483107		-3.9	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2450	0.9922045	1.132634		3.0	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2430	1.046291	1.120014		3.3	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2470	0.8863898	0.9324449		-1.2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2490	0.3536044	0.3753155		-0.5	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2330	1.038024	0.9959792		-6.9	30
Perfluorooctanoic acid (PFOA)	A	2500	2460	0.9234623	0.9625573		-1.6	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2370	0.9738652	1.020141		2.2	30
Perfluorononanoic acid (PFNA)	A	2500	2580	0.9601163	1.037344		3.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S064822-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2480	0.9146863	0.9618643		-0.9	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2280	1.040273	1.1032		2.7	30
Perfluoropentanoic acid (PFPeA)	A	2500	2480	0.9690369	1.016246		-0.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2480	0.8795644	0.9189074		-0.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2770	1.927545	2.440693		17.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2230	4.280411	4.729291		-4.3	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2160	1.813604	1.795576		-8.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2640	0.1571587	0.1684945		5.5	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2570	0.8640553	1.043753		7.1	30
Perfluorodecanoic acid (PFDA)	A	2500	2560	0.9325406	1.030618		2.3	30
Perfluorododecanoic acid (PFDoA)	A	2500	2440	0.9617566	1.009727		-2.4	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2220	4.233439	4.412465		-0.08	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2710	0.4771225	0.5708552		14.0	30
N-EtFOSAA	A	2500	2360	0.9116763	0.9369979		-5.7	30
N-MeFOSAA	A	2500	2740	0.8782699	0.9982717		9.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2370	0.9335956	0.9891316		-5.3	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2290	1.096096	1.140667		-8.2	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2280	0.6687577	0.6404522		-5.4	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2390	1.111174	1.253651		2.1	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2350	0.879319	0.8703403		-5.9	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2730	0.3406347	0.3816286		13.7	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2360	0.3911006	0.3881637		-5.7	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2510	0.3387278	0.3538442		0.6	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2310	0.995535	1.043968		1.5	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2350	0.5384319	0.5435966		-6.1	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2390	0.6322055	0.6458716		-4.3	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2420	0.9922045	1.120074		1.9	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2560	1.046291	1.180867		8.9	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2460	0.8863898	0.9273785		-1.8	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2500	0.3536044	0.3768395		-0.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2290	1.038024	0.9790341		-8.5	30
Perfluorooctanoic acid (PFOA)	A	2500	2650	0.9234623	1.034762		5.8	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2420	0.9738652	1.041866		4.4	30
Perfluorononanoic acid (PFNA)	A	2500	2470	0.9601163	0.9928882		-1.3	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S064822-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2480	0.9146863	0.961024		-1.0	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2270	1.040273	1.099124		2.3	30
Perfluoropentanoic acid (PFPeA)	A	2500	2510	0.9690369	1.026143		0.3	30
Perfluorohexanoic acid (PFHxA)	A	2500	2530	0.8795644	0.9378791		1.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2520	1.927545	2.223865		6.9	30
9Cl-PF3ONS (F53B Major)	A	2330	2190	4.280411	4.634562		-6.2	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2130	1.813604	1.771105		-9.8	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2390	0.1571587	0.1523735		-4.6	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2780	0.8640553	1.128196		15.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2600	0.9325406	1.048425		4.1	30
Perfluorododecanoic acid (PFDoA)	A	2500	2410	0.9617566	0.9963307		-3.7	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2210	4.233439	4.387974		-0.6	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2710	0.4771225	0.5691183		13.7	30
N-EtFOSAA	A	2500	2320	0.9116763	0.9217062		-7.3	30
N-MeFOSAA	A	2500	2760	0.8782699	1.004921		10.4	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2500	0.9335956	1.045693		0.2	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2510	1.096096	1.248987		0.6	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2240	0.6687577	0.628184		-7.2	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2450	1.111174	1.283589		4.6	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2530	0.879319	0.93682		1.3	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2880	0.3406347	0.4027035		20.0	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2240	0.3911006	0.3692888		-10.3	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2440	0.3387278	0.3426847		-2.6	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2410	0.995535	1.084754		5.5	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2380	0.5384319	0.5499282		-5.0	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2430	0.6322055	0.6562261		-2.8	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2600	0.9922045	1.201319		9.4	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2360	1.046291	1.088736		0.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2470	0.8863898	0.9311121		-1.4	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2530	0.3536044	0.381281		1.0	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2330	1.038024	0.997875		-6.8	30
Perfluorooctanoic acid (PFOA)	A	2500	2390	0.9234623	0.9342765		-4.4	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2430	0.9738652	1.046713		4.9	30
Perfluorononanoic acid (PFNA)	A	2500	2650	0.9601163	1.066805		6.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S064822-CCV5

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2480	0.9146863	0.9631841		-0.8	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2250	1.040273	1.090827		1.6	30
Perfluoropentanoic acid (PFPeA)	A	2500	2550	0.9690369	1.041929		1.8	30
Perfluorohexanoic acid (PFHxA)	A	2500	2480	0.8795644	0.9162656		-0.9	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2430	1.927545	2.146387		3.1	30
9Cl-PF3ONS (F53B Major)	A	2330	2070	4.280411	4.397533		-11.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2120	1.813604	1.762157		-10.2	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2230	0.1571587	0.1425122		-10.7	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2170	0.8640553	0.8826387		-9.7	30
Perfluorodecanoic acid (PFDA)	A	2500	2370	0.9325406	0.9562123		-5.1	30
Perfluorododecanoic acid (PFDoA)	A	2500	2460	0.9617566	1.017921		-1.6	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2210	4.233439	4.405366		-0.2	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2590	0.4771225	0.545637		8.9	30
N-EtFOSAA	A	2500	2480	0.9116763	0.9877045		-0.6	30
N-MeFOSAA	A	2500	2970	0.8782699	1.080414		18.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2490	0.9335956	1.039098		-0.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2590	1.096096	1.285879		3.6	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2370	0.6687577	0.666316		-1.6	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2380	1.111174	1.250811		1.9	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2500	0.879319	0.9233862		-0.1	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2730	0.3406347	0.38112		13.6	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2260	0.3911006	0.3724044		-9.6	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2460	0.3387278	0.3460181		-1.6	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2510	0.995535	1.131499		10.0	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2320	0.5384319	0.5379743		-7.0	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2400	0.6322055	0.6488747		-3.8	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2440	0.9922045	1.127014		2.5	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2470	1.046291	1.141401		5.2	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2570	0.8863898	0.9720925		3.0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2440	0.3536044	0.3678034		-2.5	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2290	1.038024	0.9799233		-8.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2610	0.9234623	1.019537		4.3	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2550	0.9738652	1.096678		9.9	30
Perfluorononanoic acid (PFNA)	A	2500	2590	0.9601163	1.041376		3.5	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S064960-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	429	0.9146863	0.8330675		-14.2	30
Perfluorobutanesulfonic acid (PFBS)	A	444	391	1.040273	0.9461383		-11.9	30
Perfluoropentanoic acid (PFPeA)	A	500	442	0.9690369	0.9044645		-11.6	30
Perfluorohexanoic acid (PFHxA)	A	500	450	0.8795644	0.8330126		-9.9	30
11Cl-PF3OUdS (F53B Minor)	A	472	397	1.927545	1.75258		-15.9	30
9Cl-PF3ONS (F53B Major)	A	466	367	4.280411	3.897745		-21.3	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	373	1.813604	1.552918		-20.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	406	0.1571587	0.129357		-18.7	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	467	0.8640553	0.9616394		-2.8	30
Perfluorodecanoic acid (PFDA)	A	500	413	0.9325406	0.8322069		-17.4	30
Perfluorododecanoic acid (PFDoA)	A	500	458	0.9617566	0.9479869		-8.4	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	376	4.233439	3.718155		-15.6	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	417	0.4771225	0.441803		-12.4	30
N-EtFOSAA	A	500	410	0.9116763	0.8150358		-18.0	30
N-MeFOSAA	A	500	500	0.8782699	0.9106013		0.08	30
Perfluorotetradecanoic acid (PFTA)	A	500	421	0.9335956	0.8833731		-15.9	30
Perfluorotridecanoic acid (PFTrDA)	A	500	399	1.096096	0.9990154		-20.2	30
Perfluorodecanesulfonic acid (PFDS)	A	482	518	0.6687577	0.7274517		7.4	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	417	1.111174	1.108736		-10.9	30
Perfluorooctanesulfonamide (FOSA)	A	500	407	0.879319	0.7519466		-18.7	30
Perfluorononanesulfonic acid (PFNS)	A	481	452	0.3406347	0.3150295		-6.1	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	417	0.3911006	0.3438004		-16.5	30
Perfluoro-1-butanesulfonamide (FBSA)	A	500	429	0.3387278	0.3019688		-14.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	423	0.995535	0.9516372		-7.5	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	410	0.5384319	0.4745499		-18.0	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	416	0.6322055	0.5614233		-16.8	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	413	0.9922045	0.9680484		-13.2	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	395	1.046291	0.9124606		-15.9	30
Perfluoroundecanoic acid (PFUnA)	A	500	466	0.8863898	0.8790136		-6.9	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	411	0.3536044	0.3103346		-17.8	30
Perfluoroheptanoic acid (PFHpA)	A	500	405	1.038024	0.8655698		-18.9	30
Perfluorooctanoic acid (PFOA)	A	500	431	0.9234623	0.8418265		-13.9	30
Perfluorooctanesulfonic acid (PFOS)	A	464	407	0.9738652	0.8751917		-12.3	30
Perfluorononanoic acid (PFNA)	A	500	440	0.9601163	0.8830278		-12.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S064960-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2190	0.9146863	0.8499954		-12.4	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2000	1.040273	0.9682813		-9.9	30
Perfluoropentanoic acid (PFPeA)	A	2500	2210	0.9690369	0.9063921		-11.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2250	0.8795644	0.8325501		-10.0	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2060	1.927545	1.816066		-12.8	30
9Cl-PF3ONS (F53B Major)	A	2330	1730	4.280411	3.663687		-25.9	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	1800	1.813604	1.499196		-23.6	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	1920	0.1571587	0.1226641		-23.1	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2140	0.8640553	0.8730375		-10.7	30
Perfluorodecanoic acid (PFDA)	A	2500	2190	0.9325406	0.8825168		-12.4	30
Perfluorododecanoic acid (PFDoA)	A	2500	2050	0.9617566	0.8491371		-17.9	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	1910	4.233439	3.796999		-14.0	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2250	0.4771225	0.4730194		-5.7	30
N-EtFOSAA	A	2500	2080	0.9116763	0.8255659		-16.9	30
N-MeFOSAA	A	2500	2660	0.8782699	0.9690955		6.5	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2030	0.9335956	0.848749		-18.8	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	1940	1.096096	0.9640431		-22.5	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2180	1.111174	1.143404		-7.0	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2230	0.6687577	0.626404		-7.5	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2080	0.879319	0.7705177		-16.7	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2400	0.3406347	0.3351586		-0.1	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2130	0.3911006	0.3500101		-15.0	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2220	0.3387278	0.3129444		-11.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2080	0.995535	0.9378824		-8.8	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2130	0.5384319	0.4932908		-14.8	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2110	0.6322055	0.5685314		-15.7	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2260	0.9922045	1.045919		-5.0	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2000	1.046291	0.9242556		-14.8	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2160	0.8863898	0.8149887		-13.7	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2080	0.3536044	0.3140979		-16.8	30
Perfluoroheptanoic acid (PFHpA)	A	2500	1930	1.038024	0.8259952		-22.8	30
Perfluorooctanoic acid (PFOA)	A	2500	2250	0.9234623	0.8813795		-9.9	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2130	0.9738652	0.9142696		-8.4	30
Perfluorononanoic acid (PFNA)	A	2500	2350	0.9601163	0.9472904		-5.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S064960-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2160	0.9146863	0.8381122		-13.7	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2020	1.040273	0.9779257		-9.0	30
Perfluoropentanoic acid (PFPeA)	A	2500	2190	0.9690369	0.8977785		-12.2	30
Perfluorohexanoic acid (PFHxA)	A	2500	2180	0.8795644	0.8082761		-12.6	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2020	1.927545	1.779034		-14.5	30
9Cl-PF3ONS (F53B Major)	A	2330	1810	4.280411	3.837385		-22.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	1870	1.813604	1.55528		-20.8	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	1810	0.1571587	0.1152861		-27.7	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2070	0.8640553	0.8431064		-13.8	30
Perfluorodecanoic acid (PFDA)	A	2500	2170	0.9325406	0.8746671		-13.2	30
Perfluorododecanoic acid (PFDoA)	A	2500	2260	0.9617566	0.9364191		-9.5	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	1940	4.233439	3.85705		-12.6	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2140	0.4771225	0.4519339		-9.9	30
N-EtFOSAA	A	2500	2450	0.9116763	0.9730937		-2.1	30
N-MeFOSAA	A	2500	2760	0.8782699	1.006319		10.6	30
Perfluorotetradecanoic acid (PFTA)	A	2500	1880	0.9335956	0.7862806		-24.8	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	1920	1.096096	0.957287		-23.1	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2450	0.6687577	0.6887336		1.7	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2190	1.111174	1.151818		-6.3	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2140	0.879319	0.7917674		-14.4	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2130	0.3406347	0.2984056		-11.1	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2020	0.3911006	0.3334685		-19.0	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2180	0.3387278	0.3060943		-13.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2170	0.995535	0.9795317		-4.7	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2070	0.5384319	0.4800534		-17.0	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2120	0.6322055	0.573223		-15.1	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	1970	0.9922045	0.9126787		-17.3	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2110	1.046291	0.9721506		-10.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2130	0.8863898	0.8059443		-14.6	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2100	0.3536044	0.3170112		-16.0	30
Perfluoroheptanoic acid (PFHpA)	A	2500	1980	1.038024	0.8455526		-21.0	30
Perfluorooctanoic acid (PFOA)	A	2500	2250	0.9234623	0.8786139		-10.1	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2130	0.9738652	0.9153226		-8.3	30
Perfluorononanoic acid (PFNA)	A	2500	2290	0.9601163	0.9195524		-8.6	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S064960-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2160	0.9146863	0.8392061		-13.5	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2000	1.040273	0.9663869		-10.0	30
Perfluoropentanoic acid (PFPeA)	A	2500	2220	0.9690369	0.9096966		-11.1	30
Perfluorohexanoic acid (PFHxA)	A	2500	2270	0.8795644	0.8402871		-9.2	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2200	1.927545	1.93778		-6.9	30
9Cl-PF3ONS (F53B Major)	A	2330	1870	4.280411	3.972669		-19.6	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	1870	1.813604	1.554634		-20.8	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2000	0.1571587	0.1275366		-20.1	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2300	0.8640553	0.9366601		-4.1	30
Perfluorodecanoic acid (PFDA)	A	2500	2300	0.9325406	0.9283494		-7.9	30
Perfluorododecanoic acid (PFDoA)	A	2500	2210	0.9617566	0.9126057		-11.8	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	1890	4.233439	3.75864		-14.8	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2430	0.4771225	0.5125742		2.3	30
N-EtFOSAA	A	2500	2210	0.9116763	0.8771758		-11.8	30
N-MeFOSAA	A	2500	2770	0.8782699	1.008233		10.8	30
Perfluorotetradecanoic acid (PFTA)	A	2500	1920	0.9335956	0.8028789		-23.2	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2000	1.096096	0.9930571		-20.2	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2160	1.111174	1.135854		-7.6	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2080	0.6687577	0.5831702		-13.9	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2070	0.879319	0.7670489		-17.0	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2160	0.3406347	0.3027008		-9.8	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2010	0.3911006	0.3304159		-19.8	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2200	0.3387278	0.3094347		-12.0	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2080	0.995535	0.9364377		-8.9	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2090	0.5384319	0.4833169		-16.5	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2140	0.6322055	0.5789029		-14.2	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2190	0.9922045	1.012634		-8.1	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2000	1.046291	0.9215873		-15.0	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2140	0.8863898	0.8087668		-14.3	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2060	0.3536044	0.311143		-17.6	30
Perfluoroheptanoic acid (PFHpA)	A	2500	1960	1.038024	0.8373929		-21.7	30
Perfluorooctanoic acid (PFOA)	A	2500	2190	0.9234623	0.857817		-12.3	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2150	0.9738652	0.9244662		-7.3	30
Perfluorononanoic acid (PFNA)	A	2500	2430	0.9601163	0.9773023		-2.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SOP-454 PFAS in Water</i>	
Perfluorobutanoic acid (PFBA)	NH-P
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluoropentanoic acid (PFPeA)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
11Cl-PF3OUdS (F53B Minor)	NH-P
9Cl-PF3ONS (F53B Major)	NH-P
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P
8:2 Fluorotelomersulfonic acid (8:2FTS A)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	NH-P
Perfluoroheptanesulfonic acid (PFHpS)	NH-P
N-EtFOSAA	NH-P
N-MeFOSAA	NH-P
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
4:2 Fluorotelomersulfonic acid (4:2FTS A)	NH-P
Perfluorodecanesulfonic acid (PFDS)	NH-P
Perfluorooctanesulfonamide (FOSA)	NH-P
Perfluorononanesulfonic acid (PFNS)	NH-P
Perfluoro-1-hexanesulfonamide (FHxSA)	NH-P
Perfluoro-1-butanefulfonamide (FBSA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
Perfluoro-4-oxapentanoic acid (PFMPA)	NH-P
Perfluoro-5-oxahexanoic acid (PFMBA)	NH-P
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P
Perfluoropetanesulfonic acid (PFPeS)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

217105A
Doc # 381 Rev 4.01/08/2020

Contact: <https://www.pacelabs.com/contact-us/contact-environmental-sciences/>
Tighe & Bond
120 Front Street, Worcester, MA 01610
Phone: 508-754-2201
Princeton Private Well Sampling
Princeton, MA
Project Location:
Project Number: P-0534017
Project Manager: Jeff Arps/Michael Scherer
Pace Analytical Quote Name/Number
Invoice Recipient: Tighe & Bond
Sampled By: M Scherer

7-Day 10-Day Field Filtered
 PFAS 10-Day (std) Due Date:
 1-Day 3-Day Field Filtered
 2-Day 4-Day Lab to Filter
 Format: PDF EXCEL
 Other:
 CLP Like Data Pkg Required: SOXHLET
 Email To: mjscherer@tighebond.com NON SOXHLET
 Fax To #:

ANALYSIS REQUESTED

Preservation Code	Counter Use Only	Total Number Of:
VIALS		
GLASS		
PLASTIC		
BACTERIA		
ENCORE		
Glassware in the fridge? Y / N		
Glassware in freezer? Y / N		
Prepackaged Cooler? Y / N		
*Pace Analytical is not responsible for missing samples from prepacked coolers		
1 Matrix Codes: GW = Ground Water WW = Waste Water DW = Drinking Water A = Air S = Soil SL = Sludge SOL = Solid O = Other (please define)		
2 Preservation Codes: I = Iced H = HCL M = Methanol N = Nitric Acid S = Sulfuric Acid B = Sodium Bisulfate X = Sodium Hydroxide T = Sodium Thiosulfate O = Other (please define)		

Pace Analytical Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc. Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
1	School House Pond Shallow	10/18/21	12:00	GRAB	DW	U			2		
2	School House Pond DEEP								2		
3	School House Pond FB							1			
4	School House Pond EQ							1			

Client Comments: Please report the MW compound list 30

Relinquished by: (signature) *Michael Scherer* Date/Time: 10/18/21 1500
 Received by: (signature) *Jeff Arps* Date/Time: 10/18/21 1015
 Relinquished by: (signature) *Michael Scherer* Date/Time: 10/19/21 1550
 Received by: (signature) *Jeff Arps* Date/Time: 10/19/21 1550
 Relinquished by: (signature) *Michael Scherer* Date/Time: 10/20/21 1550
 Received by: (signature) *Jeff Arps* Date/Time: 10/20/21 1550
 Relinquished by: (signature) *Michael Scherer* Date/Time: 10/20/21 1550
 Received by: (signature) *Jeff Arps* Date/Time: 10/20/21 1550

Special Requirements:
 IAA MCP Required
 MCP Certification Form Required
 RCP Certification Form Required
 MA State DW Required

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
 H - High, M - Medium, L - Low, C - Clean, U - Unknown

Project Entity: Government Municipality 21 J Brownfield
 Federal
 City

Other: Chromatogram AIHA-LAP, LLC

Job Comments:
 Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test[®]
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T & B
 Received By gn Date 10/19/11 Time 1550
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? RT ECA On COC? RT ECA
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

November 15, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

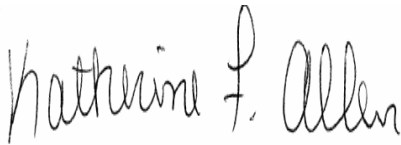
Project Location: Mountain Rd., Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1954

Enclosed are results of analyses for samples as received by the laboratory on October 29, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 11/15/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1954

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Mountain Rd., Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
Mountain Road Runoff	21J1954-01	Drinking Water		SOP-454 PFAS	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SOP-454 PFAS

Qualifications:

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

Perfluorodecanoic acid (PFDA)

B293895-BSD1

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:

Hexafluoropropylene oxide dimer acid (HFPO-DA)

B294407-BSD1

Extracted Internal Standard is outside of control limits.

Analyte & Samples(s) Qualified:

M2-8:2FTS

B294407-BS1

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

8:2 Fluorotelomersulfonic acid (8:2FTS A)

S065193-CCV5

Sample extracted at a dilution due to matrix interference. Elevated reporting limits as a result of preparation dilution.

Analyte & Samples(s) Qualified:

21J1954-01RE1[Mountain Road Runoff]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative

Project Location: Mountain Rd., Princeton, MA

Sample Description:

Work Order: 21J1954

Date Received: 10/29/2021

Field Sample #: Mountain Road Runoff

Sampled: 10/27/2021 12:00

Sample ID: 21J1954-01

Sample Matrix: Drinking Water

Sample Flags: Z-01

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date	Date/Time	Analyst
			MA	ORSG					Prepared	Analyzed	
Perfluorobutanoic acid (PFBA)	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluorobutanesulfonic acid (PFBS)	31	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluoropentanoic acid (PFPeA)	5.2	20			ng/L	1	J	SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluorohexanoic acid (PFHxA)	24	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
11Cl-PF3OUdS (F53B Minor)	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
9Cl-PF3ONS (F53B Major)	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluorodecanoic acid (PFDA)	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluorododecanoic acid (PFDoA)	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluoroheptanesulfonic acid (PFHpS)	25	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
N-EtFOSAA	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
N-MeFOSAA	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluorotetradecanoic acid (PFTA)	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluorooctanesulfonamide (FOSA)	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluorononanesulfonic acid (PFNS)	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	48	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluoro-1-butanefulfonamide (FBSA)	9.5	20			ng/L	1	J	SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluorohexanesulfonic acid (PFHxS)	430	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluoropentanesulfonic acid (PFPeS)	31	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluoroundecanoic acid (PFUnA)	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluoroheptanoic acid (PFHpA)	8.3	20			ng/L	1	J	SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluorooctanoic acid (PFOA)	27	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluorooctanesulfonic acid (PFOS)	1100	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH
Perfluorononanoic acid (PFNA)	ND	20			ng/L	1		SOP-454 PFAS	11/10/21	11/12/21 17:18	BLH

Sample Extraction Data

Prep Method: SOP 454-PFAAS-SOP-454 PFAS

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1954-01RE1 [Mountain Road Runoff]	B294407	24.5	1.00	11/10/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B293895 - SOP 454-PFAAS

Blank (B293895-BLK1)

Prepared: 11/04/21 Analyzed: 11/08/21

Perfluorobutanoic acid (PFBA)	ND	1.9	ng/L
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L
Perfluoropentanoic acid (PFPeA)	ND	1.9	ng/L
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	ng/L
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	1.9	ng/L
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	ng/L
N-EtFOSAA	ND	1.9	ng/L
N-MeFOSAA	ND	1.9	ng/L
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	ng/L
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	ng/L
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	ng/L
Perfluorooctanesulfonamide (FOSA)	ND	1.9	ng/L
Perfluorononanesulfonic acid (PFNS)	ND	1.9	ng/L
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	ng/L
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	ng/L
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	ng/L
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	ng/L
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	ng/L
Perfluoropentanesulfonic acid (PFPeS)	ND	1.9	ng/L
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	ng/L
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L

LCS (B293895-BS1)

Prepared: 11/04/21 Analyzed: 11/08/21

Perfluorobutanoic acid (PFBA)	7.39	1.9	ng/L	9.74	75.8	73-129
Perfluorobutanesulfonic acid (PFBS)	6.89	1.9	ng/L	8.62	79.9	72-130
Perfluoropentanoic acid (PFPeA)	7.12	1.9	ng/L	9.74	73.0	72-129
Perfluorohexanoic acid (PFHxA)	7.15	1.9	ng/L	9.74	73.4	72-129
11Cl-PF3OUdS (F53B Minor)	6.59	1.9	ng/L	9.18	71.8	50-150
9Cl-PF3ONS (F53B Major)	7.38	1.9	ng/L	9.08	81.3	50-150
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	6.93	1.9	ng/L	9.18	75.5	50-150
Hexafluoropropylene oxide dimer acid (HFPO-DA)	7.74	1.9	ng/L	9.74	79.4	50-150
8:2 Fluorotelomersulfonic acid (8:2FTS A)	7.71	1.9	ng/L	9.35	82.4	67-138
Perfluorodecanoic acid (PFDA)	7.07	1.9	ng/L	9.74	72.6	71-129
Perfluorododecanoic acid (PFDoA)	7.73	1.9	ng/L	9.74	79.4	72-134
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	7.09	1.9	ng/L	8.67	81.8	50-150

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B293895 - SOP 454-PFAAS

LCS (B293895-BS1)

Prepared: 11/04/21 Analyzed: 11/08/21

Perfluoroheptanesulfonic acid (PFHpS)	7.94	1.9	ng/L	9.31		85.3	69-134			
N-EtFOSAA	9.42	1.9	ng/L	9.74		96.6	61-135			
N-MeFOSAA	9.03	1.9	ng/L	9.74		92.7	65-136			
Perfluorotetradecanoic acid (PFTA)	7.63	1.9	ng/L	9.74		78.3	71-132			
Perfluorotridecanoic acid (PFTTrDA)	9.07	1.9	ng/L	9.74		93.0	65-144			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	7.84	1.9	ng/L	9.11		86.0	63-143			
Perfluorodecanesulfonic acid (PFDS)	7.63	1.9	ng/L	9.40		81.2	53-142			
Perfluorooctanesulfonamide (FOSA)	7.38	1.9	ng/L	9.74		75.8	67-137			
Perfluorononanesulfonic acid (PFNS)	7.40	1.9	ng/L	9.35		79.1	69-127			
Perfluoro-1-hexanesulfonamide (FHxSA)	7.97	1.9	ng/L	9.74		81.8	50-150			
Perfluoro-1-butanefulfonamide (FBSA)	7.39	1.9	ng/L	9.74		75.8	50-150			
Perfluorohexanesulfonic acid (PFHxS)	6.84	1.9	ng/L	8.87		77.2	68-131			
Perfluoro-4-oxapentanoic acid (PFMPA)	8.79	1.9	ng/L	9.74		90.2	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	7.96	1.9	ng/L	9.74		81.7	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	8.00	1.9	ng/L	9.26		86.5	64-140			
Perfluoropetanesulfonic acid (PFPeS)	6.92	1.9	ng/L	9.16		75.6	71-127			
Perfluoroundecanoic acid (PFUnA)	7.28	1.9	ng/L	9.74		74.7	69-133			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	8.25	1.9	ng/L	9.74		84.7	50-150			
Perfluoroheptanoic acid (PFHpA)	7.66	1.9	ng/L	9.74		78.6	72-130			
Perfluorooctanoic acid (PFOA)	7.91	1.9	ng/L	9.74		81.2	71-133			
Perfluorooctanesulfonic acid (PFOS)	7.56	1.9	ng/L	9.01		83.9	65-140			
Perfluorononanoic acid (PFNA)	7.55	1.9	ng/L	9.74		77.4	69-130			

LCS Dup (B293895-BS1)

Prepared: 11/04/21 Analyzed: 11/08/21

Perfluorobutanoic acid (PFBA)	7.44	1.9	ng/L	9.74		76.4	73-129	0.680	30	
Perfluorobutanesulfonic acid (PFBS)	6.99	1.9	ng/L	8.62		81.1	72-130	1.32	30	
Perfluoropentanoic acid (PFPeA)	7.19	1.9	ng/L	9.74		73.9	72-129	1.08	30	
Perfluorohexanoic acid (PFHxA)	7.07	1.9	ng/L	9.74		72.6	72-129	1.12	30	
11Cl-PF3OUdS (F53B Minor)	6.98	1.9	ng/L	9.17		76.1	50-150	5.69	30	
9Cl-PF3ONS (F53B Major)	7.55	1.9	ng/L	9.08		83.2	50-150	2.25	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	7.22	1.9	ng/L	9.17		78.7	50-150	4.05	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	7.64	1.9	ng/L	9.74		78.5	50-150	1.23	30	
8:2 Fluorotelomersulfonic acid (8:2FTS A)	8.11	1.9	ng/L	9.35		86.7	67-138	5.10	30	
Perfluorodecanoic acid (PFDA)	6.81	1.9	ng/L	9.74		69.9	* 71-129	3.81	30	L-07
Perfluorododecanoic acid (PFDoA)	7.64	1.9	ng/L	9.74		78.5	72-134	1.18	30	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	7.34	1.9	ng/L	8.67		84.7	50-150	3.47	30	
Perfluoroheptanesulfonic acid (PFHpS)	7.39	1.9	ng/L	9.30		79.4	69-134	7.18	30	
N-EtFOSAA	8.81	1.9	ng/L	9.74		90.5	61-135	6.62	30	
N-MeFOSAA	8.65	1.9	ng/L	9.74		88.8	65-136	4.29	30	
Perfluorotetradecanoic acid (PFTA)	7.78	1.9	ng/L	9.74		79.9	71-132	1.92	30	
Perfluorotridecanoic acid (PFTTrDA)	8.61	1.9	ng/L	9.74		88.4	65-144	5.15	30	
4:2 Fluorotelomersulfonic acid (4:2FTS A)	7.79	1.9	ng/L	9.10		85.5	63-143	0.645	30	
Perfluorodecanesulfonic acid (PFDS)	8.07	1.9	ng/L	9.40		85.9	53-142	5.63	30	
Perfluorooctanesulfonamide (FOSA)	7.59	1.9	ng/L	9.74		77.9	67-137	2.74	30	
Perfluorononanesulfonic acid (PFNS)	7.77	1.9	ng/L	9.35		83.2	69-127	4.96	30	
Perfluoro-1-hexanesulfonamide (FHxSA)	8.24	1.9	ng/L	9.74		84.6	50-150	3.32	30	
Perfluoro-1-butanefulfonamide (FBSA)	7.16	1.9	ng/L	9.74		73.5	50-150	3.12	30	
Perfluorohexanesulfonic acid (PFHxS)	7.34	1.9	ng/L	8.86		82.9	68-131	7.07	30	
Perfluoro-4-oxapentanoic acid (PFMPA)	8.64	1.9	ng/L	9.74		88.7	50-150	1.73	30	
Perfluoro-5-oxahexanoic acid (PFMBA)	8.00	1.9	ng/L	9.74		82.2	50-150	0.543	30	

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B293895 - SOP 454-PFAAS

LCS Dup (B293895-BSD1)

Prepared: 11/04/21 Analyzed: 11/08/21

6:2 Fluorotelomersulfonic acid (6:2FTS A)	7.72	1.9	ng/L	9.25		83.5	64-140	3.58	30	
Perfluoropentanesulfonic acid (PFPeS)	7.22	1.9	ng/L	9.15		78.9	71-127	4.27	30	
Perfluoroundecanoic acid (PFUnA)	7.79	1.9	ng/L	9.74		80.0	69-133	6.73	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	8.19	1.9	ng/L	9.74		84.1	50-150	0.763	30	
Perfluoroheptanoic acid (PFHpA)	7.89	1.9	ng/L	9.74		81.0	72-130	3.02	30	
Perfluorooctanoic acid (PFOA)	8.16	1.9	ng/L	9.74		83.8	71-133	3.10	30	
Perfluorooctanesulfonic acid (PFOS)	7.49	1.9	ng/L	9.01		83.2	65-140	0.910	30	
Perfluorononanoic acid (PFNA)	7.39	1.9	ng/L	9.74		75.9	69-130	2.03	30	

Batch B294407 - SOP 454-PFAAS

Blank (B294407-BLK1)

Prepared: 11/10/21 Analyzed: 11/12/21

Perfluorobutanoic acid (PFBA)	ND	2.1	ng/L							
Perfluorobutanesulfonic acid (PFBS)	ND	2.1	ng/L							
Perfluoropentanoic acid (PFPeA)	ND	2.1	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	2.1	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	2.1	ng/L							
9Cl-PF3ONS (F53B Major)	ND	2.1	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.1	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.1	ng/L							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.1	ng/L							
Perfluorodecanoic acid (PFDA)	ND	2.1	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	2.1	ng/L							
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	2.1	ng/L							
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.1	ng/L							
N-EtFOSAA	ND	2.1	ng/L							
N-MeFOSAA	ND	2.1	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	2.1	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	2.1	ng/L							
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.1	ng/L							
Perfluorodecanesulfonic acid (PFDS)	ND	2.1	ng/L							
Perfluorooctanesulfonamide (FOSA)	ND	2.1	ng/L							
Perfluoronanesulfonic acid (PFNS)	ND	2.1	ng/L							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.1	ng/L							
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.1	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	2.1	ng/L							
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.1	ng/L							
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.1	ng/L							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.1	ng/L							
Perfluoropentanesulfonic acid (PFPeS)	ND	2.1	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	2.1	ng/L							
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.1	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	2.1	ng/L							
Perfluorooctanoic acid (PFOA)	ND	2.1	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	2.1	ng/L							
Perfluorononanoic acid (PFNA)	ND	2.1	ng/L							

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B294407 - SOP 454-PFAAS

LCS (B294407-BS1)

Prepared: 11/10/21 Analyzed: 11/12/21

Perfluorobutanoic acid (PFBA)	9.34	2.0	ng/L	10.2		91.8	73-129			
Perfluorobutanesulfonic acid (PFBS)	8.13	2.0	ng/L	9.01		90.3	72-130			
Perfluoropentanoic acid (PFPeA)	8.91	2.0	ng/L	10.2		87.5	72-129			
Perfluorohexanoic acid (PFHxA)	8.77	2.0	ng/L	10.2		86.1	72-129			
11Cl-PF3OUdS (F53B Minor)	8.13	2.0	ng/L	9.59		84.7	50-150			
9Cl-PF3ONS (F53B Major)	9.01	2.0	ng/L	9.49		94.9	50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	9.09	2.0	ng/L	9.59		94.7	50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	9.63	2.0	ng/L	10.2		94.6	50-150			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	10.1	2.0	ng/L	9.78		104	67-138			
Perfluorodecanoic acid (PFDA)	8.63	2.0	ng/L	10.2		84.7	71-129			
Perfluorododecanoic acid (PFDoA)	9.21	2.0	ng/L	10.2		90.5	72-134			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	9.12	2.0	ng/L	9.06		101	50-150			
Perfluoroheptanesulfonic acid (PFHpS)	8.86	2.0	ng/L	9.72		91.1	69-134			
N-EtFOSAA	10.3	2.0	ng/L	10.2		101	61-135			
N-MeFOSAA	9.81	2.0	ng/L	10.2		96.3	65-136			
Perfluorotetradecanoic acid (PFTA)	9.19	2.0	ng/L	10.2		90.3	71-132			
Perfluorotridecanoic acid (PFTrDA)	9.41	2.0	ng/L	10.2		92.4	65-144			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	9.11	2.0	ng/L	9.52		95.7	63-143			
Perfluorodecanesulfonic acid (PFDS)	8.14	2.0	ng/L	9.83		82.9	53-142			
Perfluorooctanesulfonamide (FOSA)	8.84	2.0	ng/L	10.2		86.8	67-137			
Perfluorononanesulfonic acid (PFNS)	9.41	2.0	ng/L	9.78		96.3	69-127			
Perfluoro-1-hexanesulfonamide (FHxSA)	9.51	2.0	ng/L	10.2		93.4	50-150			
Perfluoro-1-butanefulfonamide (FBSA)	8.62	2.0	ng/L	10.2		84.7	50-150			
Perfluorohexanesulfonic acid (PFHxS)	7.95	2.0	ng/L	9.27		85.8	68-131			
Perfluoro-4-oxapentanoic acid (PFMPA)	10.1	2.0	ng/L	10.2		99.4	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	9.60	2.0	ng/L	10.2		94.3	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	10.3	2.0	ng/L	9.67		107	64-140			
Perfluoropentanesulfonic acid (PFPeS)	7.63	2.0	ng/L	9.57		79.7	71-127			
Perfluoroundecanoic acid (PFUnA)	9.26	2.0	ng/L	10.2		91.0	69-133			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	10.7	2.0	ng/L	10.2		105	50-150			
Perfluoroheptanoic acid (PFHpA)	9.71	2.0	ng/L	10.2		95.4	72-130			
Perfluorooctanoic acid (PFOA)	10.5	2.0	ng/L	10.2		103	71-133			
Perfluorooctanesulfonic acid (PFOS)	8.10	2.0	ng/L	9.42		86.0	65-140			
Perfluorononanoic acid (PFNA)	9.58	2.0	ng/L	10.2		94.1	69-130			

LCS Dup (B294407-BS1)

Prepared: 11/10/21 Analyzed: 11/12/21

Perfluorobutanoic acid (PFBA)	10.2	2.0	ng/L	9.89		103	73-129	8.84	30	
Perfluorobutanesulfonic acid (PFBS)	8.43	2.0	ng/L	8.76		96.3	72-130	3.56	30	
Perfluoropentanoic acid (PFPeA)	9.46	2.0	ng/L	9.89		95.6	72-129	6.03	30	
Perfluorohexanoic acid (PFHxA)	9.25	2.0	ng/L	9.89		93.5	72-129	5.36	30	
11Cl-PF3OUdS (F53B Minor)	8.82	2.0	ng/L	9.32		94.6	50-150	8.19	30	
9Cl-PF3ONS (F53B Major)	9.90	2.0	ng/L	9.22		107	50-150	9.41	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	9.50	2.0	ng/L	9.32		102	50-150	4.42	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	6.99	2.0	ng/L	9.89		70.6	50-150	31.9 *	30	R-05
8:2 Fluorotelomersulfonic acid (8:2FTS A)	10.5	2.0	ng/L	9.50		110	67-138	3.27	30	
Perfluorodecanoic acid (PFDA)	9.14	2.0	ng/L	9.89		92.4	71-129	5.79	30	
Perfluorododecanoic acid (PFDoA)	9.69	2.0	ng/L	9.89		97.9	72-134	5.04	30	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	9.90	2.0	ng/L	8.81		112	50-150	8.22	30	

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B294407 - SOP 454-PFAAS

LCS Dup (B294407-BSD1)

Prepared: 11/10/21 Analyzed: 11/12/21

Perfluoroheptanesulfonic acid (PFHpS)	9.54	2.0	ng/L	9.45		101	69-134	7.39	30	
N-EtFOSAA	12.2	2.0	ng/L	9.89		123	61-135	16.9	30	
N-MeFOSAA	10.5	2.0	ng/L	9.89		106	65-136	6.84	30	
Perfluorotetradecanoic acid (PFTA)	9.56	2.0	ng/L	9.89		96.6	71-132	3.87	30	
Perfluorotridecanoic acid (PFTrDA)	10.1	2.0	ng/L	9.89		102	65-144	6.96	30	
4:2 Fluorotelomersulfonic acid (4:2FTS A)	9.65	2.0	ng/L	9.25		104	63-143	5.77	30	
Perfluorodecanesulfonic acid (PFDS)	8.77	2.0	ng/L	9.55		91.8	53-142	7.38	30	
Perfluorooctanesulfonamide (FOSA)	9.35	2.0	ng/L	9.89		94.5	67-137	5.60	30	
Perfluorononanesulfonic acid (PFNS)	10.3	2.0	ng/L	9.50		109	69-127	9.20	30	
Perfluoro-1-hexanesulfonamide (FHxSA)	10.5	2.0	ng/L	9.89		106	50-150	9.55	30	
Perfluoro-1-butanefulfonamide (FBSA)	9.26	2.0	ng/L	9.89		93.6	50-150	7.13	30	
Perfluorohexanesulfonic acid (PFHxS)	9.02	2.0	ng/L	9.00		100	68-131	12.6	30	
Perfluoro-4-oxapentanoic acid (PFMPA)	10.9	2.0	ng/L	9.89		110	50-150	7.45	30	
Perfluoro-5-oxahexanoic acid (PFMBA)	10.2	2.0	ng/L	9.89		103	50-150	6.35	30	
6:2 Fluorotelomersulfonic acid (6:2FTS A)	11.2	2.0	ng/L	9.40		119	64-140	8.50	30	
Perfluoropentanesulfonic acid (PFPeS)	8.59	2.0	ng/L	9.30		92.4	71-127	11.8	30	
Perfluoroundecanoic acid (PFUnA)	10.1	2.0	ng/L	9.89		102	69-133	8.64	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	11.2	2.0	ng/L	9.89		113	50-150	3.95	30	
Perfluoroheptanoic acid (PFHpA)	10.0	2.0	ng/L	9.89		101	72-130	3.32	30	
Perfluorooctanoic acid (PFOA)	11.0	2.0	ng/L	9.89		111	71-133	4.61	30	
Perfluorooctanesulfonic acid (PFOS)	9.04	2.0	ng/L	9.15		98.7	65-140	10.9	30	
Perfluorononanoic acid (PFNA)	10.0	2.0	ng/L	9.89		101	69-130	4.57	30	

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m3	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
L-07	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
R-05	Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
S-29	Extracted Internal Standard is outside of control limits.
V-20	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Z-01	Sample extracted at a dilution due to matrix interference. Elevated reporting limits as a result of preparation dilution.

ANALYST

STATION PDF Management Station
JFC James F. Constantino
JLH Jessica L. Hoffman
EGR Evett G Rivera
BAA Bonita A. Abanulo

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Mountain Road Runoff (21J1954-01RE1)			Lab File ID: 21J1954-01RE1.d			Analyzed: 11/12/21 17:18			
M8FOSA	386027.8	3.964583	434,290.00	3.956583	89	50 - 150	0.0080	+/-0.50	
M2PFTA	1464779	4.297266	1,748,768.00	4.297266	84	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	239765.6	3.778883	219,119.00	3.770917	109	50 - 150	0.0080	+/-0.50	
MPFBA	724663.4	1.050167	744,445.00	1.050167	97	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	311329.7	2.699433	271,282.00	2.699433	115	50 - 150	0.0000	+/-0.50	
M6PFDA	1162756	3.7794	1,013,901.00	3.7794	115	50 - 150	0.0000	+/-0.50	
M3PFBS	163504.2	1.787233	170,351.00	1.787233	96	50 - 150	0.0000	+/-0.50	
M7PFUnA	1384453	3.92205	1,405,982.00	3.92205	98	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	97659.3	3.4044	123,278.00	3.4044	79	50 - 150	0.0000	+/-0.50	
M5PFPeA	746317.3	1.6321	749,755.00	1.6321	100	50 - 150	0.0000	+/-0.50	
M5PFHxA	1001387	2.432467	999,321.00	2.432467	100	50 - 150	0.0000	+/-0.50	
M3PFHxS	127484	3.153433	126,860.00	3.153433	100	50 - 150	0.0000	+/-0.50	
M4PFHpA	1038580	3.113417	1,062,495.00	3.113417	98	50 - 150	0.0000	+/-0.50	
M8PFOA	1028748	3.421167	1,022,909.00	3.421167	101	50 - 150	0.0000	+/-0.50	
M8PFOS	147673.4	3.620217	147,936.00	3.620217	100	50 - 150	0.0000	+/-0.50	
M9PFNA	913618.3	3.62125	891,883.00	3.62125	102	50 - 150	0.0000	+/-0.50	
MPFDoA	1337800	4.056667	1,396,075.00	4.056667	96	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	245138.2	3.921517	289,504.00	3.921517	85	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	308675.4	3.8497	319,952.00	3.8497	96	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B293895-BLK1)			Lab File ID: B293895-BLK1.d			Analyzed: 11/08/21 10:51			
M8FOSA	360347.7	4.052533	339,382.00	4.044533	106	50 - 150	0.0080	+/-0.50	
M2-4:2FTS	173697.4	2.67895	143,359.00	2.678933	121	50 - 150	0.0000	+/-0.50	
M2PFTA	1456815	4.410933	1,310,564.00	4.410933	111	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	195293.1	3.883067	147,200.00	3.883067	133	50 - 150	0.0000	+/-0.50	
MPFBA	750445.9	1.13325	550,898.00	1.13325	136	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	211729.9	2.97845	203,262.00	2.97845	104	50 - 150	0.0000	+/-0.50	
M6PFDA	1086914	3.8756	844,341.00	3.883583	129	50 - 150	-0.0080	+/-0.50	
M3PFBS	160300.7	2.044233	129,662.00	2.054933	124	50 - 150	-0.0107	+/-0.50	
M7PFUnA	1435103	4.025983	1,071,417.00	4.033983	134	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	117499.8	3.525617	92,424.00	3.5336	127	50 - 150	-0.0080	+/-0.50	
M5PFPeA	739145.4	1.857667	565,564.00	1.857667	131	50 - 150	0.0000	+/-0.50	
M5PFHxA	1025358	2.7636	773,718.00	2.771783	133	50 - 150	-0.0082	+/-0.50	
M3PFHxS	129081.9	3.308383	103,548.00	3.308383	125	50 - 150	0.0000	+/-0.50	
M4PFHpA	1043177	3.277267	784,414.00	3.27725	133	50 - 150	0.0000	+/-0.50	
M8PFOA	1028305	3.53415	789,294.00	3.542133	130	50 - 150	-0.0080	+/-0.50	
M8PFOS	140014.5	3.716267	115,844.00	3.724233	121	50 - 150	-0.0080	+/-0.50	
M9PFNA	1067003	3.725233	804,190.00	3.725233	133	50 - 150	0.0000	+/-0.50	
MPFDoA	1328665	4.169283	1,127,246.00	4.169283	118	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	241598	4.03345	207,462.00	4.04145	116	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	249659.3	3.953883	198,246.00	3.961867	126	50 - 150	-0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B293895-BS1)									
			Lab File ID: B293895-BS1.d			Analyzed: 11/08/21 10:37			
M8FOSA	411593.3	4.052533	339,382.00	4.044533	121	50 - 150	0.0080	+/-0.50	
M2-4:2FTS	181999	2.68715	143,359.00	2.678933	127	50 - 150	0.0082	+/-0.50	
M2PFTA	1507396	4.410933	1,310,564.00	4.410933	115	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	215214.4	3.88305	147,200.00	3.883067	146	50 - 150	0.0000	+/-0.50	
MPFBA	777372.1	1.141567	550,898.00	1.13325	141	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	233092	2.986567	203,262.00	2.97845	115	50 - 150	0.0081	+/-0.50	
M6PFDA	1154806	3.883583	844,341.00	3.883583	137	50 - 150	0.0000	+/-0.50	
M3PFBS	171489.7	2.054933	129,662.00	2.054933	132	50 - 150	0.0000	+/-0.50	
M7PFUnA	1363129	4.033967	1,071,417.00	4.033983	127	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	132249.1	3.5336	92,424.00	3.5336	143	50 - 150	0.0000	+/-0.50	
M5PFPeA	776054.8	1.86595	565,564.00	1.857667	137	50 - 150	0.0083	+/-0.50	
M5PFHxA	1076656	2.771783	773,718.00	2.771783	139	50 - 150	0.0000	+/-0.50	
M3PFHxS	136727.9	3.308383	103,548.00	3.308383	132	50 - 150	0.0000	+/-0.50	
M4PFHpA	1143547	3.27725	784,414.00	3.27725	146	50 - 150	0.0000	+/-0.50	
M8PFOA	1102001	3.542133	789,294.00	3.542133	140	50 - 150	0.0000	+/-0.50	
M8PFOS	151012	3.724233	115,844.00	3.724233	130	50 - 150	0.0000	+/-0.50	
M9PFNA	1132298	3.725233	804,190.00	3.725233	141	50 - 150	0.0000	+/-0.50	
MPFDoA	1395201	4.169283	1,127,246.00	4.169283	124	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	253351.9	4.04145	207,462.00	4.04145	122	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	265779.8	3.961867	198,246.00	3.961867	134	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS Dup (B293895-BSD1)									
			Lab File ID: B293895-BSD1.d			Analyzed: 11/08/21 10:44			
M8FOSA	400913.8	4.052533	339,382.00	4.044533	118	50 - 150	0.0080	+/-0.50	
M2-4:2FTS	184214.7	2.678933	143,359.00	2.678933	128	50 - 150	0.0000	+/-0.50	
M2PF _T A	1516479	4.410933	1,310,564.00	4.410933	116	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	204794.4	3.88305	147,200.00	3.883067	139	50 - 150	0.0000	+/-0.50	
MPFBA	801384.3	1.13325	550,898.00	1.13325	145	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	242044.4	2.97845	203,262.00	2.97845	119	50 - 150	0.0000	+/-0.50	
M6PFDA	1162087	3.883583	844,341.00	3.883583	138	50 - 150	0.0000	+/-0.50	
M3PFBS	169370.9	2.044217	129,662.00	2.054933	131	50 - 150	-0.0107	+/-0.50	
M7PFU _n A	1420227	4.025983	1,071,417.00	4.033983	133	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	129238.9	3.525617	92,424.00	3.5336	140	50 - 150	-0.0080	+/-0.50	
M5PFPeA	786390.6	1.857667	565,564.00	1.857667	139	50 - 150	0.0000	+/-0.50	
M5PFH _x A	1106334	2.771783	773,718.00	2.771783	143	50 - 150	0.0000	+/-0.50	
M3PFH _x S	131843.5	3.308383	103,548.00	3.308383	127	50 - 150	0.0000	+/-0.50	
M4PFH _p A	1119623	3.27725	784,414.00	3.27725	143	50 - 150	0.0000	+/-0.50	
M8PFOA	1087704	3.542133	789,294.00	3.542133	138	50 - 150	0.0000	+/-0.50	
M8PFOS	154146.1	3.716267	115,844.00	3.724233	133	50 - 150	-0.0080	+/-0.50	
M9PFNA	1137439	3.725233	804,190.00	3.725233	141	50 - 150	0.0000	+/-0.50	
MPFD _o A	1420795	4.169283	1,127,246.00	4.169283	126	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	260542.4	4.04145	207,462.00	4.04145	126	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	281428.3	3.961867	198,246.00	3.961867	142	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B294407-BLK1)			Lab File ID: B294407-BLK1.d			Analyzed: 11/12/21 15:01			
M8FOSA	380642	3.956583	434,290.00	3.964583	88	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	186132.5	2.349033	199,038.00	2.357183	94	50 - 150	-0.0082	+/-0.50	
M2PFTA	1540814	4.297266	1,748,768.00	4.305333	88	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	311194.3	3.770917	219,119.00	3.778883	142	50 - 150	-0.0080	+/-0.50	
MPFBA	842514.5	1.050167	744,445.00	1.050167	113	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	298691.4	2.699433	271,282.00	2.699433	110	50 - 150	0.0000	+/-0.50	
M6PFDA	1145556	3.771433	1,013,901.00	3.7794	113	50 - 150	-0.0080	+/-0.50	
M3PFBS	164957.2	1.787233	170,351.00	1.795517	97	50 - 150	-0.0083	+/-0.50	
M7PFUnA	1375923	3.91405	1,405,982.00	3.92205	98	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	129788.9	3.4044	123,278.00	3.4044	105	50 - 150	0.0000	+/-0.50	
M5PFPeA	767050.1	1.6321	749,755.00	1.6321	102	50 - 150	0.0000	+/-0.50	
M5PFHxA	1012678	2.432467	999,321.00	2.440933	101	50 - 150	-0.0085	+/-0.50	
M3PFHxS	131467.7	3.153433	126,860.00	3.153433	104	50 - 150	0.0000	+/-0.50	
M4PFHpA	1026826	3.105283	1,062,495.00	3.113417	97	50 - 150	-0.0081	+/-0.50	
M8PFOA	1042643	3.421167	1,022,909.00	3.421167	102	50 - 150	0.0000	+/-0.50	
M8PFOS	143578.6	3.620217	147,936.00	3.6282	97	50 - 150	-0.0080	+/-0.50	
M9PFNA	918754.8	3.62125	891,883.00	3.62125	103	50 - 150	0.0000	+/-0.50	
MPFDoA	1377596	4.048666	1,396,075.00	4.056667	99	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	264957.1	3.921517	289,504.00	3.929517	92	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	321851.9	3.8497	319,952.00	3.8497	101	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B294407-BS1)									
			Lab File ID: B294407-BS1.d			Analyzed: 11/12/21 14:47			
M8FOSA	412356.2	3.964583	434,290.00	3.964583	95	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	209652	2.357183	199,038.00	2.357183	105	50 - 150	0.0000	+/-0.50	
M2PFTA	1650549	4.297266	1,748,768.00	4.305333	94	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	350027.6	3.778883	219,119.00	3.778883	160	50 - 150	0.0000	+/-0.50	*
MPFBA	915582	1.050167	744,445.00	1.050167	123	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	290690.4	2.691233	271,282.00	2.699433	107	50 - 150	-0.0082	+/-0.50	
M6PFDA	1283813	3.7794	1,013,901.00	3.7794	127	50 - 150	0.0000	+/-0.50	
M3PFBS	182541.9	1.787233	170,351.00	1.795517	107	50 - 150	-0.0083	+/-0.50	
M7PFUnA	1446427	3.92205	1,405,982.00	3.92205	103	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	145780.9	3.4044	123,278.00	3.4044	118	50 - 150	0.0000	+/-0.50	
M5PFPeA	838997.3	1.6321	749,755.00	1.6321	112	50 - 150	0.0000	+/-0.50	
M5PFHxA	1102802	2.432467	999,321.00	2.440933	110	50 - 150	-0.0085	+/-0.50	
M3PFHxS	142751.5	3.153433	126,860.00	3.153433	113	50 - 150	0.0000	+/-0.50	
M4PFHpA	1132073	3.113417	1,062,495.00	3.113417	107	50 - 150	0.0000	+/-0.50	
M8PFOA	1128914	3.421167	1,022,909.00	3.421167	110	50 - 150	0.0000	+/-0.50	
M8PFOS	162992.9	3.620217	147,936.00	3.6282	110	50 - 150	-0.0080	+/-0.50	
M9PFNA	988624.7	3.62125	891,883.00	3.62125	111	50 - 150	0.0000	+/-0.50	
MPFDoA	1393363	4.056667	1,396,075.00	4.056667	100	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	282526.2	3.929517	289,504.00	3.929517	98	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	343458.2	3.8497	319,952.00	3.8497	107	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS Dup (B294407-BSD1)									
			Lab File ID: B294407-BSD1.d			Analyzed: 11/12/21 14:54			
M8FOSA	340056.6	3.956583	434,290.00	3.964583	78	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	174184.3	2.349033	199,038.00	2.357183	88	50 - 150	-0.0082	+/-0.50	
M2PFTA	1309804	4.297266	1,748,768.00	4.305333	75	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	284667.6	3.778883	219,119.00	3.778883	130	50 - 150	0.0000	+/-0.50	
MPFBA	767040.6	1.050167	744,445.00	1.050167	103	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	361674.6	2.691233	271,282.00	2.699433	133	50 - 150	-0.0082	+/-0.50	
M6PFDA	1070388	3.771433	1,013,901.00	3.7794	106	50 - 150	-0.0080	+/-0.50	
M3PFBS	151559	1.787233	170,351.00	1.795517	89	50 - 150	-0.0083	+/-0.50	
M7PFUnA	1169118	3.91405	1,405,982.00	3.92205	83	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	121444.1	3.4044	123,278.00	3.4044	99	50 - 150	0.0000	+/-0.50	
M5PFPeA	700349.9	1.6321	749,755.00	1.6321	93	50 - 150	0.0000	+/-0.50	
M5PFHxA	935072.9	2.432467	999,321.00	2.440933	94	50 - 150	-0.0085	+/-0.50	
M3PFHxS	115342	3.153433	126,860.00	3.153433	91	50 - 150	0.0000	+/-0.50	
M4PFHpA	968717	3.113417	1,062,495.00	3.113417	91	50 - 150	0.0000	+/-0.50	
M8PFOA	946266.1	3.413117	1,022,909.00	3.421167	93	50 - 150	-0.0080	+/-0.50	
M8PFOS	131066.1	3.620217	147,936.00	3.6282	89	50 - 150	-0.0080	+/-0.50	
M9PFNA	828397.8	3.62125	891,883.00	3.62125	93	50 - 150	0.0000	+/-0.50	
MPFDoA	1152271	4.056667	1,396,075.00	4.056667	83	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	219396.3	3.921517	289,504.00	3.929517	76	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	277322.3	3.8497	319,952.00	3.8497	87	50 - 150	0.0000	+/-0.50	

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S065115-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	423	0.8628989	0.799615		-15.3	30
Perfluorobutanesulfonic acid (PFBS)	A	444	373	0.9900012	0.8887524		-16.1	30
Perfluoropentanoic acid (PFPeA)	A	500	407	0.9353824	0.8334025		-18.5	30
Perfluorohexanoic acid (PFHxA)	A	500	422	0.86678	0.8120918		-15.6	30
11Cl-PF3OUdS (F53B Minor)	A	472	445	1.835659	1.753341		-5.6	30
9Cl-PF3ONS (F53B Major)	A	466	453	3.897292	3.781268		-2.9	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	415	1.602632	1.49088		-12.1	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	403	2.979159	0.1173783		-19.3	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	498	0.7665044	0.8855685		3.7	30
Perfluorodecanoic acid (PFDA)	A	500	417	0.929213	0.8634664		-16.6	30
Perfluorododecanoic acid (PFDoA)	A	500	427	0.9361562	0.8549957		-14.5	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	402	3.93233	3.474057		-9.8	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	534	0.4568315	0.5241968		12.1	30
N-EtFOSAA	A	500	406	0.9836556	0.8064959		-18.9	30
N-MeFOSAA	A	500	422	1.027301	0.9631958		-15.6	30
Perfluorotetradecanoic acid (PFTA)	A	500	468	0.8542676	0.8965934		-6.4	30
Perfluorotridecanoic acid (PFTrDA)	A	500	461	1.009812	1.048253		-7.8	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	446	1.061084	1.109116		-4.8	30
Perfluorodecanesulfonic acid (PFDS)	A	482	462	0.6287667	0.6217433		-4.2	30
Perfluorooctanesulfonamide (FOSA)	A	500	400	0.8334166	0.7355786		-20.0	30
Perfluorononanesulfonic acid (PFNS)	A	481	519	0.319818	0.349107		7.9	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	473	0.3462983	0.3123852		-5.5	30
Perfluoro-1-butanefulfonamide (FBSA)	A	500	447	0.3044628	0.2947673		-10.6	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	418	0.9652933	0.9468037		-8.5	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	480	0.495495	0.4751388		-4.1	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	476	0.5879048	0.5586348		-4.8	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	447	1.004025	1.024852		-6.2	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	391	0.9760894	0.9024041		-16.8	30
Perfluoroundecanoic acid (PFUnA)	A	500	417	0.8528971	0.7808284		-16.6	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	469	0.3237613	0.3070561		-6.1	30
Perfluoroheptanoic acid (PFHpA)	A	500	473	0.9139933	0.8670914		-5.4	30
Perfluorooctanoic acid (PFOA)	A	500	462	0.8653288	0.8024483		-7.7	30
Perfluorooctanesulfonic acid (PFOS)	A	464	458	0.9382121	0.9902376		-1.2	30
Perfluorononanoic acid (PFNA)	A	500	460	0.938444	0.8883012		-8.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S065115-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2330	0.8628989	0.880375		-6.8	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2150	0.9900012	1.027367		-3.0	30
Perfluoropentanoic acid (PFPeA)	A	2500	2270	0.9353824	0.9277113		-9.3	30
Perfluorohexanoic acid (PFHxA)	A	2500	2270	0.86678	0.8744921		-9.2	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2370	1.835659	1.884347		0.6	30
9Cl-PF3ONS (F53B Major)	A	2330	2350	3.897292	3.962634		0.8	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2380	1.602632	1.711559		0.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2160	2.979159	0.1263891		-13.8	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2740	0.7665044	0.961566		14.0	30
Perfluorodecanoic acid (PFDA)	A	2500	2240	0.929213	0.9266368		-10.5	30
Perfluorododecanoic acid (PFDoA)	A	2500	2340	0.9361562	0.9366762		-6.4	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2230	3.93233	3.893405		0.3	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2410	0.4568315	0.4730519		1.1	30
N-EtFOSAA	A	2500	2350	0.9836556	0.9403483		-5.8	30
N-MeFOSAA	A	2500	2310	1.027301	1.054079		-7.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2260	0.8542676	0.8611868		-9.6	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2360	1.009812	1.066181		-5.5	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2390	0.6287667	0.6443868		-0.7	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2470	1.061084	1.213426		5.3	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2210	0.8334166	0.8124679		-11.6	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2460	0.319818	0.3315026		2.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2700	0.3462983	0.3616047		8.0	30
Perfluoro-1-butananesulfonamide (FBSA)	A	2500	2440	0.3044628	0.3211985		-2.6	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2220	0.9652933	1.006942		-2.7	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2640	0.495495	0.5265675		5.6	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2620	0.5879048	0.6201523		5.0	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2470	1.004025	1.119909		3.7	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2140	0.9760894	0.9862956		-9.0	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2550	0.8528971	0.9549437		2.0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2530	0.3237613	0.332383		1.0	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2520	0.9139933	0.931435		0.9	30
Perfluorooctanoic acid (PFOA)	A	2500	2500	0.8653288	0.8759402		-0.01	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2250	0.9382121	0.9700591		-3.2	30
Perfluorononanoic acid (PFNA)	A	2500	2570	0.938444	0.9950557		2.7	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S065115-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2330	0.8628989	0.8811921		-6.7	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2190	0.9900012	1.046099		-1.2	30
Perfluoropentanoic acid (PFPeA)	A	2500	2310	0.9353824	0.9463008		-7.5	30
Perfluorohexanoic acid (PFHxA)	A	2500	2270	0.86678	0.8737316		-9.2	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2590	1.835659	2.060038		9.9	30
9Cl-PF3ONS (F53B Major)	A	2330	2450	3.897292	4.13158		5.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2440	1.602632	1.753723		3.4	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2070	2.979159	0.1215601		-17.0	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2380	0.7665044	0.8377837		-0.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2220	0.929213	0.921425		-11.0	30
Perfluorododecanoic acid (PFDoA)	A	2500	2420	0.9361562	0.9701233		-3.0	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2280	3.93233	3.990996		2.7	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2690	0.4568315	0.5288559		13.0	30
N-EtFOSAA	A	2500	2390	0.9836556	0.9538518		-4.5	30
N-MeFOSAA	A	2500	2270	1.027301	1.035474		-9.3	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2410	0.8542676	0.9187587		-3.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2380	1.009812	1.073788		-4.8	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2510	1.061084	1.236901		7.4	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2600	0.6287667	0.6991961		7.7	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2250	0.8334166	0.828345		-9.9	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2560	0.319818	0.345274		6.7	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2730	0.3462983	0.3651987		9.1	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2430	0.3044628	0.3199283		-2.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2290	0.9652933	1.03915		0.5	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2650	0.495495	0.5295835		6.2	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2610	0.5879048	0.6176661		4.5	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2540	1.004025	1.150603		6.6	30
Perfluoropetanesulfonic acid (PFPeS)	A	2350	2250	0.9760894	1.038276		-4.2	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2480	0.8528971	0.9276148		-0.9	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2580	0.3237613	0.3401267		3.4	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2430	0.9139933	0.8969026		-2.8	30
Perfluorooctanoic acid (PFOA)	A	2500	2490	0.8653288	0.8719887		-0.5	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2350	0.9382121	1.016093		1.4	30
Perfluorononanoic acid (PFNA)	A	2500	2440	0.938444	0.9463743		-2.3	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S065193-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	430	0.8628989	0.812246		-14.0	30
Perfluorobutanesulfonic acid (PFBS)	A	444	380	0.9900012	0.9057642		-14.5	30
Perfluoropentanoic acid (PFPeA)	A	500	432	0.9353824	0.8845059		-13.5	30
Perfluorohexanoic acid (PFHxA)	A	500	447	0.86678	0.8597585		-10.7	30
11Cl-PF3OUdS (F53B Minor)	A	472	483	1.835659	1.901037		2.3	30
9Cl-PF3ONS (F53B Major)	A	466	425	3.897292	3.547621		-8.9	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	429	1.602632	1.540415		-9.2	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	366	2.979159	0.1066423		-26.7	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	548	0.7665044	0.9752743		14.2	30
Perfluorodecanoic acid (PFDA)	A	500	409	0.929213	0.8479211		-18.1	30
Perfluorododecanoic acid (PFDoA)	A	500	414	0.9361562	0.8288102		-17.2	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	416	3.93233	3.595173		-6.6	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	387	0.4568315	0.380312		-18.7	30
N-EtFOSAA	A	500	419	0.9836556	0.8329432		-16.2	30
N-MeFOSAA	A	500	390	1.027301	0.8896324		-22.1	30
Perfluorotetradecanoic acid (PFTA)	A	500	459	0.8542676	0.8795762		-8.2	30
Perfluorotridecanoic acid (PFTrDA)	A	500	390	1.009812	0.8874929		-21.9	30
Perfluorodecanesulfonic acid (PFDS)	A	482	436	0.6287667	0.5875307		-9.5	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	428	1.061084	1.064296		-8.6	30
Perfluorooctanesulfonamide (FOSA)	A	500	430	0.8334166	0.7903497		-14.0	30
Perfluorononanesulfonic acid (PFNS)	A	481	420	0.319818	0.2827318		-12.6	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	533	0.3462983	0.3522219		6.6	30
Perfluoro-1-butanefulfonamide (FBSA)	A	500	469	0.3044628	0.3092859		-6.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	426	0.9652933	0.9640774		-6.8	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	470	0.495495	0.4660075		-5.9	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	457	0.5879048	0.5364524		-8.6	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	423	1.004025	0.9719038		-11.0	30
Perfluoropentanesulfonic acid (PFPeS)	A	470	365	0.9760894	0.8429797		-22.3	30
Perfluoroundecanoic acid (PFUnA)	A	500	435	0.8528971	0.8148841		-13.0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	500	480	0.3237613	0.3138713		-4.0	30
Perfluoroheptanoic acid (PFHpA)	A	500	471	0.9139933	0.8638247		-5.8	30
Perfluorooctanoic acid (PFOA)	A	500	475	0.8653288	0.8251183		-5.1	30
Perfluorooctanesulfonic acid (PFOS)	A	464	399	0.9382121	0.8624749		-14.0	30
Perfluorononanoic acid (PFNA)	A	500	446	0.938444	0.8610913		-10.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S065193-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2380	0.8628989	0.8995787		-4.7	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2200	0.9900012	1.047284		-1.1	30
Perfluoropentanoic acid (PFPeA)	A	2500	2390	0.9353824	0.9759035		-4.6	30
Perfluorohexanoic acid (PFHxA)	A	2500	2380	0.86678	0.917677		-4.7	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2420	1.835659	1.92478		2.7	30
9Cl-PF3ONS (F53B Major)	A	2330	2400	3.897292	4.05115		3.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2310	1.602632	1.663269		-1.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	1960	2.979159	0.1146334		-21.7	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2770	0.7665044	0.9750795		15.6	30
Perfluorodecanoic acid (PFDA)	A	2500	2360	0.929213	0.9788841		-5.5	30
Perfluorododecanoic acid (PFDoA)	A	2500	2320	0.9361562	0.9275358		-7.3	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2270	3.93233	3.969859		2.2	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2390	0.4568315	0.4700091		0.4	30
N-EtFOSAA	A	2500	2280	0.9836556	0.9100714		-8.9	30
N-MeFOSAA	A	2500	2420	1.027301	1.106819		-3.0	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2340	0.8542676	0.8906106		-6.5	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2380	1.009812	1.075504		-4.6	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2410	1.061084	1.18768		3.1	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2420	0.6287667	0.6530737		0.6	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2470	0.8334166	0.9066466		-1.4	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2500	0.319818	0.3373986		4.3	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2760	0.3462983	0.3693868		10.3	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2520	0.3044628	0.3318331		0.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2270	0.9652933	1.031588		-0.3	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2640	0.495495	0.5265402		5.5	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2620	0.5879048	0.6189643		4.8	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2820	1.004025	1.275926		18.4	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2270	0.9760894	1.047715		-3.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2320	0.8528971	0.8702713		-7.1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2710	0.3237613	0.3565569		8.3	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2580	0.9139933	0.9528248		3.2	30
Perfluorooctanoic acid (PFOA)	A	2500	2580	0.8653288	0.9045224		3.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2130	0.9382121	0.9216298		-8.1	30
Perfluorononanoic acid (PFNA)	A	2500	2450	0.938444	0.9481167		-2.2	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S065193-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2360	0.8628989	0.8930858		-5.4	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2190	0.9900012	1.043439		-1.5	30
Perfluoropentanoic acid (PFPeA)	A	2500	2370	0.9353824	0.9702235		-5.1	30
Perfluorohexanoic acid (PFHxA)	A	2500	2350	0.86678	0.9052124		-6.0	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2640	1.835659	2.095784		11.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2650	3.897292	4.473237		13.6	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2260	1.602632	1.624912		-4.2	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2020	2.979159	0.1183483		-19.2	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2720	0.7665044	0.9554875		13.3	30
Perfluorodecanoic acid (PFDA)	A	2500	2100	0.929213	0.8704248		-16.0	30
Perfluorododecanoic acid (PFDoA)	A	2500	2520	0.9361562	1.010519		1.0	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2280	3.93233	3.991677		2.8	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2660	0.4568315	0.5221496		11.6	30
N-EtFOSAA	A	2500	2500	0.9836556	0.9998938		0.08	30
N-MeFOSAA	A	2500	2140	1.027301	0.9761852		-14.5	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2490	0.8542676	0.948065		-0.4	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2520	1.009812	1.135268		0.7	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2610	0.6287667	0.7023388		8.2	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2610	1.061084	1.28163		11.4	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2500	0.8334166	0.9196404		0.05	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2550	0.319818	0.3435179		6.2	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2470	0.3462983	0.3304193		-1.2	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2500	0.3044628	0.3293527		-0.08	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2210	0.9652933	1.000475		-3.3	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2650	0.495495	0.5297108		6.2	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2660	0.5879048	0.6296098		6.5	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2550	1.004025	1.158248		7.3	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2270	0.9760894	1.047941		-3.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2280	0.8528971	0.8541395		-8.8	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2790	0.3237613	0.3680313		11.8	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2590	0.9139933	0.9576801		3.7	30
Perfluorooctanoic acid (PFOA)	A	2500	2580	0.8653288	0.9048242		3.3	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2420	0.9382121	1.046347		4.4	30
Perfluorononanoic acid (PFNA)	A	2500	2460	0.938444	0.9553772		-1.4	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S065193-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2350	0.8628989	0.8860905		-6.2	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2140	0.9900012	1.019276		-3.7	30
Perfluoropentanoic acid (PFPeA)	A	2500	2330	0.9353824	0.9547375		-6.7	30
Perfluorohexanoic acid (PFHxA)	A	2500	2350	0.86678	0.903339		-6.2	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2290	1.835659	1.818587		-2.9	30
9Cl-PF3ONS (F53B Major)	A	2330	2320	3.897292	3.918012		-0.3	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2230	1.602632	1.600545		-5.6	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2060	2.979159	0.1205975		-17.7	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2590	0.7665044	0.911715		8.0	30
Perfluorodecanoic acid (PFDA)	A	2500	2280	0.929213	0.9451302		-8.8	30
Perfluorododecanoic acid (PFDoA)	A	2500	2500	0.9361562	0.9999374		-0.06	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2260	3.93233	3.950489		1.7	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2670	0.4568315	0.52528		12.2	30
N-EtFOSAA	A	2500	2310	0.9836556	0.9238697		-7.5	30
N-MeFOSAA	A	2500	2210	1.027301	1.010166		-11.5	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2350	0.8542676	0.8951266		-6.0	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2400	1.009812	1.083532		-3.9	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2470	0.6287667	0.6649487		2.4	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2400	1.061084	1.183794		2.7	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2340	0.8334166	0.8600857		-6.4	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2480	0.319818	0.3345653		3.4	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2700	0.3462983	0.3611759		7.9	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2520	0.3044628	0.3322971		0.8	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2260	0.9652933	1.026943		-0.7	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2610	0.495495	0.5202772		4.3	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2640	0.5879048	0.6236201		5.5	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2630	1.004025	1.190113		10.3	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2320	0.9760894	1.068538		-1.5	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2670	0.8528971	1.001401		6.9	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2740	0.3237613	0.3604289		9.5	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2520	0.9139933	0.928855		0.7	30
Perfluorooctanoic acid (PFOA)	A	2500	2550	0.8653288	0.8922683		1.8	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2280	0.9382121	0.9834333		-1.9	30
Perfluorononanoic acid (PFNA)	A	2500	2510	0.938444	0.9722193		0.3	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S065193-CCV5

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2350	0.8628989	0.8883123		-5.9	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2230	0.9900012	1.064607		0.5	30
Perfluoropentanoic acid (PFPeA)	A	2500	2340	0.9353824	0.9563209		-6.5	30
Perfluorohexanoic acid (PFHxA)	A	2500	2320	0.86678	0.8914917		-7.4	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2450	1.835659	1.945374		3.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2340	3.897292	3.954361		0.6	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2360	1.602632	1.696537		0.02	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	1920	2.979159	0.1121971		-23.4	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	3130	0.7665044	1.099453		30.6	30 *
Perfluorodecanoic acid (PFDA)	A	2500	2160	0.929213	0.894415		-13.6	30
Perfluorododecanoic acid (PFDoA)	A	2500	2350	0.9361562	0.9402406		-6.0	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2260	3.93233	3.952277		1.8	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2630	0.4568315	0.5165034		10.4	30
N-EtFOSAA	A	2500	2370	0.9836556	0.9454209		-5.3	30
N-MeFOSAA	A	2500	2280	1.027301	1.04137		-8.8	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2430	0.8542676	0.9234345		-3.0	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2480	1.009812	1.119939		-0.7	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2440	0.6287667	0.6575115		1.3	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2600	1.061084	1.276981		10.9	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2360	0.8334166	0.8681399		-5.5	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2400	0.319818	0.3233953		-0.06	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2770	0.3462983	0.3716528		11.0	30
Perfluoro-1-butananesulfonamide (FBSA)	A	2500	2420	0.3044628	0.3192537		-3.1	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2270	0.9652933	1.03158		-0.3	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2670	0.495495	0.5332471		6.9	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2640	0.5879048	0.6247573		5.7	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2520	1.004025	1.14429		6.0	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2290	0.9760894	1.058119		-2.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2540	0.8528971	0.9504971		1.5	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2720	0.3237613	0.3575407		8.6	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2530	0.9139933	0.9357188		1.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2670	0.8653288	0.9372367		6.9	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2260	0.9382121	0.9765217		-2.6	30
Perfluorononanoic acid (PFNA)	A	2500	2340	0.938444	0.9075274		-6.3	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S065350-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	500	411	0.8628989	0.7767966		-17.7	30
Perfluorobutanesulfonic acid (PFBS)	A	444	376	0.9900012	0.8964929		-15.3	30
Perfluoropentanoic acid (PFPeA)	A	500	416	0.9353824	0.8516842		-16.7	30
Perfluorohexanoic acid (PFHxA)	A	500	405	0.86678	0.7790904		-19.1	30
11Cl-PF3OUdS (F53B Minor)	A	472	453	1.835659	1.784002		-4.0	30
9Cl-PF3ONS (F53B Major)	A	466	414	3.897292	3.461266		-11.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	472	382	1.602632	1.371496		-19.1	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	500	446	2.979159	0.1298651		-10.8	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	480	469	0.7665044	0.8350472		-2.2	30
Perfluorodecanoic acid (PFDA)	A	500	447	0.929213	0.9249802		-10.7	30
Perfluorododecanoic acid (PFDoA)	A	500	428	0.9361562	0.8564361		-14.4	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	445	397	3.93233	3.43245		-10.8	30
Perfluoroheptanesulfonic acid (PFHpS)	A	476	444	0.4568315	0.4364572		-6.7	30
N-EtFOSAA	A	500	423	0.9836556	0.8401595		-15.5	30
N-MeFOSAA	A	500	357	1.027301	0.8140062		-28.7	30
Perfluorotetradecanoic acid (PFTA)	A	500	407	0.8542676	0.7801978		-18.6	30
Perfluorotridecanoic acid (PFTrDA)	A	500	404	1.009812	0.9179308		-19.3	30
Perfluorodecanesulfonic acid (PFDS)	A	482	441	0.6287667	0.594456		-8.4	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	468	392	1.061084	0.9770584		-16.1	30
Perfluorooctanesulfonamide (FOSA)	A	500	421	0.8334166	0.7733729		-15.9	30
Perfluorononanesulfonic acid (PFNS)	A	481	445	0.319818	0.2991542		-7.6	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	500	485	0.3462983	0.320464		-3.0	30
Perfluoro-1-butanesulfonamide (FBSA)	A	500	443	0.3044628	0.2918565		-11.5	30
Perfluorohexanesulfonic acid (PFHxS)	A	457	410	0.9652933	0.9274793		-10.3	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	500	452	0.495495	0.4480754		-9.5	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	500	427	0.5879048	0.5012978		-14.6	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	476	415	1.004025	0.9515162		-12.9	30
Perfluoropetanesulfonic acid (PFPeS)	A	470	409	0.9760894	0.9428846		-13.0	30
Perfluoroundecanoic acid (PFUnA)	A	500	384	0.8528971	0.7198819		-23.1	30
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	A	500	459	0.3237613	0.3001851		-8.2	30
Perfluoroheptanoic acid (PFHpA)	A	500	447	0.9139933	0.8204578		-10.5	30
Perfluorooctanoic acid (PFOA)	A	500	467	0.8653288	0.8117122		-6.6	30
Perfluorooctanesulfonic acid (PFOS)	A	464	374	0.9382121	0.8073275		-19.5	30
Perfluorononanoic acid (PFNA)	A	500	422	0.938444	0.8150103		-15.6	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S065350-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2300	0.8628989	0.8677844		-8.1	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2110	0.9900012	1.004918		-5.1	30
Perfluoropentanoic acid (PFPeA)	A	2500	2260	0.9353824	0.9257279		-9.5	30
Perfluorohexanoic acid (PFHxA)	A	2500	2250	0.86678	0.8676165		-9.9	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2560	1.835659	2.036757		8.7	30
9Cl-PF3ONS (F53B Major)	A	2330	2450	3.897292	4.130858		5.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2200	1.602632	1.582513		-6.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2580	2.979159	0.1517355		3.3	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2450	0.7665044	0.8635585		2.2	30
Perfluorodecanoic acid (PFDA)	A	2500	2180	0.929213	0.9044307		-12.7	30
Perfluorododecanoic acid (PFDoA)	A	2500	2270	0.9361562	0.9093539		-9.1	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2300	3.93233	4.018576		3.4	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2330	0.4568315	0.4574979		-2.2	30
N-EtFOSAA	A	2500	2240	0.9836556	0.8962744		-10.2	30
N-MeFOSAA	A	2500	2110	1.027301	0.964184		-15.5	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2230	0.8542676	0.8479232		-11.0	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2350	1.009812	1.059295		-6.1	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2380	1.061084	1.172965		1.8	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2310	0.6287667	0.6227854		-4.1	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2230	0.8334166	0.8205943		-10.7	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2420	0.319818	0.3258002		0.7	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2460	0.3462983	0.3286325		-1.7	30
Perfluoro-1-butanesulfonamide (FBSA)	A	2500	2210	0.3044628	0.2917234		-11.5	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2070	0.9652933	0.9396211		-9.2	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2440	0.495495	0.4856665		-2.6	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2470	0.5879048	0.5843681		-1.0	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2330	1.004025	1.056201		-2.3	30
Perfluoropetanesulfonic acid (PFPeS)	A	2350	1950	0.9760894	0.8982874		-17.2	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2270	0.8528971	0.8488035		-9.4	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2570	0.3237613	0.3383694		2.8	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2490	0.9139933	0.9198631		-0.3	30
Perfluorooctanoic acid (PFOA)	A	2500	2500	0.8653288	0.8778018		0.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2240	0.9382121	0.9681817		-3.4	30
Perfluorononanoic acid (PFNA)	A	2500	2340	0.938444	0.9057678		-6.5	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SOP-454 PFAS

S065350-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2280	0.8628989	0.8616227		-8.8	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2130	0.9900012	1.01618		-4.0	30
Perfluoropentanoic acid (PFPeA)	A	2500	2230	0.9353824	0.910699		-11.0	30
Perfluorohexanoic acid (PFHxA)	A	2500	2170	0.86678	0.8351708		-13.2	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2510	1.835659	1.991837		6.3	30
9Cl-PF3ONS (F53B Major)	A	2330	2470	3.897292	4.164881		5.9	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2180	1.602632	1.568774		-7.5	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2630	2.979159	0.1545654		5.2	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2380	0.7665044	0.8388838		-0.8	30
Perfluorodecanoic acid (PFDA)	A	2500	2290	0.929213	0.9484461		-8.4	30
Perfluorododecanoic acid (PFDoA)	A	2500	2340	0.9361562	0.9347182		-6.6	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2250	3.93233	3.934657		1.3	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2310	0.4568315	0.4546727		-2.8	30
N-EtFOSAA	A	2500	2210	0.9836556	0.8815693		-11.7	30
N-MeFOSAA	A	2500	2080	1.027301	0.9510434		-16.7	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2220	0.8542676	0.8455886		-11.2	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2260	1.009812	1.018425		-9.8	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2350	1.061084	1.15966		0.6	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2250	0.6287667	0.6072015		-6.5	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2210	0.8334166	0.8120943		-11.6	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2480	0.319818	0.334113		3.2	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2460	0.3462983	0.3293711		-1.5	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2180	0.3044628	0.2877892		-12.7	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	1980	0.9652933	0.8993655		-13.1	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2470	0.495495	0.4932295		-1.1	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2500	0.5879048	0.5908259		0.04	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2180	1.004025	0.98978		-8.5	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2040	0.9760894	0.9395855		-13.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2340	0.8528971	0.8770164		-6.3	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2530	0.3237613	0.3327743		1.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2410	0.9139933	0.8885809		-3.7	30
Perfluorooctanoic acid (PFOA)	A	2500	2560	0.8653288	0.8986082		2.6	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2170	0.9382121	0.9365618		-6.6	30
Perfluorononanoic acid (PFNA)	A	2500	2440	0.938444	0.9438937		-2.6	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SOP-454 PFAS

S065350-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanoic acid (PFBA)	A	2500	2300	0.8628989	0.8673607		-8.2	30
Perfluorobutanesulfonic acid (PFBS)	A	2220	2090	0.9900012	0.998108		-5.7	30
Perfluoropentanoic acid (PFPeA)	A	2500	2300	0.9353824	0.9405107		-8.0	30
Perfluorohexanoic acid (PFHxA)	A	2500	2210	0.86678	0.8506661		-11.6	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2560	1.835659	2.036492		8.6	30
9Cl-PF3ONS (F53B Major)	A	2330	2380	3.897292	4.015758		2.1	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2150	1.602632	1.548822		-8.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2420	2.979159	0.1422877		-3.0	30
8:2 Fluorotelomersulfonic acid (8:2FTS A)	A	2400	2560	0.7665044	0.9016288		6.8	30
Perfluorodecanoic acid (PFDA)	A	2500	2150	0.929213	0.8896466		-14.1	30
Perfluorododecanoic acid (PFDoA)	A	2500	2270	0.9361562	0.9076398		-9.3	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEES)	A	2220	2240	3.93233	3.911422		0.7	30
Perfluoroheptanesulfonic acid (PFHpS)	A	2380	2550	0.4568315	0.5018745		7.2	30
N-EtFOSAA	A	2500	2260	0.9836556	0.9006911		-9.8	30
N-MeFOSAA	A	2500	2020	1.027301	0.9222181		-19.2	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2380	0.8542676	0.9056481		-4.9	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2390	1.009812	1.076642		-4.5	30
Perfluorodecanesulfonic acid (PFDS)	A	2410	2490	0.6287667	0.6705834		3.3	30
4:2 Fluorotelomersulfonic acid (4:2FTS A)	A	2340	2340	1.061084	1.154745		0.2	30
Perfluorooctanesulfonamide (FOSA)	A	2500	2190	0.8334166	0.8068153		-12.2	30
Perfluorononanesulfonic acid (PFNS)	A	2400	2760	0.319818	0.3725942		15.1	30
Perfluoro-1-hexanesulfonamide (FHxSA)	A	2500	2440	0.3462983	0.3266154		-2.3	30
Perfluoro-1-butanefulfonamide (FBSA)	A	2500	2150	0.3044628	0.2839612		-13.8	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2050	0.9652933	0.9302521		-10.1	30
Perfluoro-4-oxapentanoic acid (PFMPA)	A	2500	2490	0.495495	0.4971524		-0.3	30
Perfluoro-5-oxahexanoic acid (PFMBA)	A	2500	2530	0.5879048	0.5968281		1.0	30
6:2 Fluorotelomersulfonic acid (6:2FTS A)	A	2380	2360	1.004025	1.073377		-0.6	30
Perfluoropentanesulfonic acid (PFPeS)	A	2350	2020	0.9760894	0.9319009		-14.1	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2420	0.8528971	0.9051827		-3.3	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	A	2500	2520	0.3237613	0.3315375		0.8	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2410	0.9139933	0.8910418		-3.4	30
Perfluorooctanoic acid (PFOA)	A	2500	2550	0.8653288	0.8932617		1.9	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2200	0.9382121	0.949903		-5.2	30
Perfluorononanoic acid (PFNA)	A	2500	2490	0.938444	0.9664642		-0.3	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SOP-454 PFAS in Water</i>	
Perfluorobutanoic acid (PFBA)	NH-P
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluoropentanoic acid (PFPeA)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
11Cl-PF3OUdS (F53B Minor)	NH-P
9Cl-PF3ONS (F53B Major)	NH-P
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P
8:2 Fluorotelomersulfonic acid (8:2FTS A)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	NH-P
Perfluoroheptanesulfonic acid (PFHpS)	NH-P
N-EtFOSAA	NH-P
N-MeFOSAA	NH-P
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
4:2 Fluorotelomersulfonic acid (4:2FTS A)	NH-P
Perfluorodecanesulfonic acid (PFDS)	NH-P
Perfluorooctanesulfonamide (FOSA)	NH-P
Perfluorononanesulfonic acid (PFNS)	NH-P
Perfluoro-1-hexanesulfonamide (FHxSA)	NH-P
Perfluoro-1-butanesulfonamide (FBSA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
Perfluoro-4-oxapentanoic acid (PFMPA)	NH-P
Perfluoro-5-oxahexanoic acid (PFMBA)	NH-P
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P
Perfluoropetanesulfonic acid (PFPeS)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T & B
 Received By MA Date 10/29/11 Time 2035
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 3.0
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? MA Were Samples Tampered with? MA
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? MA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? MA Acid _____ Base _____

Vials	Containers:	#	#	#	#
Unp-	1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-	500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-	250 mL Amb.		250 mL Plastic	<u>2</u>	4oz Amb/Clear
Bisulfate-	Flashpoint		Col./Bacteria		2oz Amb/Clear
DI-	Other Glass		Other Plastic		Encore
Thiosulfate-	SOC Kit		Plastic Bag		Frozen:
Sulfuric-	Perchlorate		Ziplock		

Unused Media

Vials	Containers:	#	#	#	#
Unp-	1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-	500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-	250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-	Col./Bacteria		Flashpoint		2oz Amb/Clear
DI-	Other Plastic		Other Glass		Encore
Thiosulfate-	SOC Kit		Plastic Bag		Frozen:
Sulfuric-	Perchlorate		Ziplock		

Comments:

Tighe&Bond

APPENDIX G

October 25, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

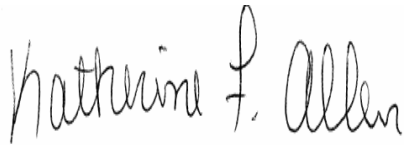
Project Location: Gregory Spring, Princeton, MA
Client Job Number:
Project Number: P-0534017
Laboratory Work Order Number: 21J1135

Enclosed are results of analyses for samples as received by the laboratory on October 19, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager



QA Officer
Katherine Allen



Laboratory Manager
Daren Damboragian



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303
ATTN: Michael Scherer

REPORT DATE: 10/25/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534017

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J1135

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Gregory Spring, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
Gregory Spring	21J1135-01	Drinking Water		EPA 537.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative

Project Location: Gregory Spring, Princeton, MA

Sample Description:

Work Order: 21J1135

Date Received: 10/19/2021

Field Sample #: Gregory Spring

Sampled: 10/18/2021 12:00

Sample ID: 21J1135-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	MCL/SMCL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
		RL	MA ORSG							
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:25	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:25	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:25	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:25	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:25	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:25	BLH
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:25	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:25	BLH
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:25	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:25	BLH
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:25	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:25	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:25	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:25	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:25	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:25	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:25	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	10/20/21	10/21/21 21:25	BLH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
13C-PFHxA	81.3	70-130	10/21/21 21:25
M3HFPO-DA	76.0	70-130	10/21/21 21:25
13C-PFDA	88.0	70-130	10/21/21 21:25
d5-NEtFOSAA	83.8	70-130	10/21/21 21:25

Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J1135-01 [Gregory Spring]	B292840	268	1.00	10/20/21

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292840 - EPA 537.1										
Blank (B292840-BLK1)										
Prepared: 10/20/21 Analyzed: 10/21/21										
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	36.4		ng/L	38.8		93.9	70-130			
Surrogate: M3HFPO-DA	37.1		ng/L	38.8		95.5	70-130			
Surrogate: 13C-PFDA	36.5		ng/L	38.8		94.0	70-130			
Surrogate: d5-NEtFOSAA	140		ng/L	155		90.1	70-130			
LCS (B292840-BS1)										
Prepared: 10/20/21 Analyzed: 10/21/21										
Perfluorobutanesulfonic acid (PFBS)	7.49	1.9	ng/L	8.53		87.7	70-130			
Perfluorohexanoic acid (PFHxA)	8.83	1.9	ng/L	9.62		91.8	70-130			
Perfluorohexanesulfonic acid (PFHxS)	8.40	1.9	ng/L	8.79		95.6	70-130			
Perfluoroheptanoic acid (PFHpA)	8.53	1.9	ng/L	9.62		88.7	70-130			
Perfluorooctanoic acid (PFOA)	8.74	1.9	ng/L	9.62		90.9	70-130			
Perfluorooctanesulfonic acid (PFOS)	8.36	1.9	ng/L	8.93		93.6	70-130			
Perfluorononanoic acid (PFNA)	8.50	1.9	ng/L	9.62		88.3	70-130			
Perfluorodecanoic acid (PFDA)	9.36	1.9	ng/L	9.62		97.3	70-130			
N-EtFOSAA	8.02	1.9	ng/L	9.62		83.4	70-130			
Perfluoroundecanoic acid (PFUnA)	9.18	1.9	ng/L	9.62		95.5	70-130			
N-MeFOSAA	7.98	1.9	ng/L	9.62		83.0	70-130			
Perfluorododecanoic acid (PFDoA)	8.78	1.9	ng/L	9.62		91.3	70-130			
Perfluorotridecanoic acid (PFTTrDA)	8.24	1.9	ng/L	9.62		85.6	70-130			
Perfluorotetradecanoic acid (PFTA)	7.81	1.9	ng/L	9.62		81.2	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	8.51	1.9	ng/L	9.62		88.5	70-130			
11Cl-PF3OUdS (F53B Minor)	7.76	1.9	ng/L	9.07		85.6	70-130			
9Cl-PF3ONS (F53B Major)	7.85	1.9	ng/L	8.98		87.5	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	8.22	1.9	ng/L	9.09		90.4	70-130			
Surrogate: 13C-PFHxA	37.6		ng/L	38.5		97.8	70-130			
Surrogate: M3HFPO-DA	38.3		ng/L	38.5		99.7	70-130			
Surrogate: 13C-PFDA	38.2		ng/L	38.5		99.2	70-130			
Surrogate: d5-NEtFOSAA	147		ng/L	154		95.7	70-130			

Note: Blank Subtraction is not performed unless otherwise noted

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m ³	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector

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

ANALYST

RAP Raisa A. Petraitis
 STATION PDF Management Station
 JFC James F. Constantino
 JLH Jessica L. Hoffman
 EGR Evett G Rivera
 BB2 Bethany M Bisnett

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV1

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2250	1.135859	1.175661		1.4	30
Perfluorohexanoic acid (PFHxA)	A	2500	2270	0.7557946	0.7128042		-9.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2210	0.9172992	0.9026665		-2.9	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2160	0.5186879	0.4819864		-13.7	30
Perfluorooctanoic acid (PFOA)	A	2500	2650	1.014466	1.07518		6.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2450	0.9546162	1.024945		5.4	30
Perfluorononanoic acid (PFNA)	A	2500	2550	0.8583182	0.9147195		1.9	30
Perfluorodecanoic acid (PFDA)	A	2500	2710	0.9883469	1.105104		8.5	30
N-EtFOSAA	A	2500	2530	0.8211978	0.9177848		1.2	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2800	1.00186	1.134988		11.9	30
N-MeFOSAA	A	2500	2460	0.9767918	1.045588		-1.8	30
Perfluorododecanoic acid (PFDoA)	A	2500	2650	1.175679	1.305484		6.0	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2720	1.152766	1.336643		8.6	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2640	0.9718999	1.117673		5.7	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2420	1.628033E-02	1.622857E-02		-3.3	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2370	1.429084	1.580493		0.4	30
9Cl-PF3ONS (F53B Major)	A	2330	2380	2.949299	3.33391		2.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2240	1.373201	1.369497		-5.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV2

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	23000	1.135859	1.204066		3.8	30
Perfluorohexanoic acid (PFHxA)	A	25000	26700	0.7557946	0.8400239		6.9	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	24500	0.9172992	0.9985564		7.4	30
Perfluoroheptanoic acid (PFHpA)	A	25000	26100	0.5186879	0.5836485		4.5	30
Perfluorooctanoic acid (PFOA)	A	25000	26800	1.014466	1.086907		7.4	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	24700	0.9546162	1.034115		6.4	30
Perfluorononanoic acid (PFNA)	A	25000	26700	0.8583182	0.958436		6.8	30
Perfluorodecanoic acid (PFDA)	A	25000	28400	0.9883469	1.157711		13.7	30
N-EtFOSAA	A	25000	26200	0.8211978	0.8869809		4.8	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27700	1.00186	1.125429		10.9	30
N-MeFOSAA	A	25000	26500	0.9767918	1.0947		6.1	30
Perfluorododecanoic acid (PFDoA)	A	25000	27800	1.175679	1.371556		11.4	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	28400	1.152766	1.396505		13.5	30
Perfluorotetradecanoic acid (PFTA)	A	25000	28000	0.9718999	1.184497		12.0	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25700	1.628033E-02	1.727919E-02		2.9	30
11Cl-PF3OUdS (F53B Minor)	A	23600	27200	1.429084	1.756578		15.1	30
9Cl-PF3ONS (F53B Major)	A	23300	26100	2.949299	3.549062		12.0	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	25000	1.373201	1.528624		6.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV3

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	2220	2240	1.135859	1.169424		0.8	30
Perfluorohexanoic acid (PFHxA)	A	2500	2580	0.7557946	0.8109661		3.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	2280	2350	0.9172992	0.9588437		3.1	30
Perfluoroheptanoic acid (PFHpA)	A	2500	2450	0.5186879	0.5468278		-2.1	30
Perfluorooctanoic acid (PFOA)	A	2500	2630	1.014466	1.06544		5.2	30
Perfluorooctanesulfonic acid (PFOS)	A	2320	2370	0.9546162	0.992586		2.1	30
Perfluorononanoic acid (PFNA)	A	2500	2530	0.8583182	0.9099244		1.4	30
Perfluorodecanoic acid (PFDA)	A	2500	2820	0.9883469	1.147251		12.7	30
N-EtFOSAA	A	2500	2470	0.8211978	0.8944513		-1.4	30
Perfluoroundecanoic acid (PFUnA)	A	2500	2840	1.00186	1.15277		13.6	30
N-MeFOSAA	A	2500	2430	0.9767918	1.036022		-2.7	30
Perfluorododecanoic acid (PFDoA)	A	2500	2670	1.175679	1.314604		6.7	30
Perfluorotridecanoic acid (PFTrDA)	A	2500	2720	1.152766	1.339952		8.9	30
Perfluorotetradecanoic acid (PFTA)	A	2500	2720	0.9718999	1.152383		9.0	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	2500	2470	1.628033E-02	0.0166028		-1.1	30
11Cl-PF3OUdS (F53B Minor)	A	2360	2400	1.429084	1.601682		1.8	30
9Cl-PF3ONS (F53B Major)	A	2330	2340	2.949299	3.284328		0.5	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	2360	2450	1.373201	1.49829		4.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 537.1

S064565-CCV4

COMPOUND	TYPE	CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	22200	21600	1.135859	1.127881		-2.8	30
Perfluorohexanoic acid (PFHxA)	A	25000	26800	0.7557946	0.843118		7.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	22800	24000	0.9172992	0.978684		5.2	30
Perfluoroheptanoic acid (PFHpA)	A	25000	26500	0.5186879	0.5925618		6.1	30
Perfluorooctanoic acid (PFOA)	A	25000	27000	1.014466	1.091847		7.8	30
Perfluorooctanesulfonic acid (PFOS)	A	23200	24200	0.9546162	1.015027		4.4	30
Perfluorononanoic acid (PFNA)	A	25000	26900	0.8583182	0.9668927		7.7	30
Perfluorodecanoic acid (PFDA)	A	25000	28300	0.9883469	1.151287		13.1	30
N-EtFOSAA	A	25000	26300	0.8211978	0.8902964		5.2	30
Perfluoroundecanoic acid (PFUnA)	A	25000	27800	1.00186	1.127115		11.1	30
N-MeFOSAA	A	25000	26300	0.9767918	1.083849		5.0	30
Perfluorododecanoic acid (PFDoA)	A	25000	27700	1.175679	1.364352		10.8	30
Perfluorotridecanoic acid (PFTrDA)	A	25000	28200	1.152766	1.387405		12.7	30
Perfluorotetradecanoic acid (PFTA)	A	25000	27700	0.9718999	1.172784		10.9	30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	A	25000	25800	1.628033E-02	1.735632E-02		3.4	30
11Cl-PF3OUdS (F53B Minor)	A	23600	26000	1.429084	1.683193		10.1	30
9Cl-PF3ONS (F53B Major)	A	23300	25500	2.949299	3.47103		9.4	30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	A	23600	25200	1.373201	1.537678		6.7	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 537.1 in Drinking Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

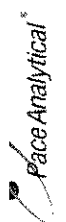
Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

2151135

Doc # 381 Rev 4_01/08/2020

https://www.pacelabs.com/

Phone: 612-607-6400
Fax: 612-607-6344



Page 1 of 1

CHAIN OF CUSTODY RECORD

CONTACT INFORMATION:
 Contact: https://www.pacelabs.com/contact-us/contact-environmental-sciences/
 Tigne & Bond
 120 Front Street, Worcester, MA 01610
 Phone: 508-754-2201
 Princeton Private Well Sampling
 Princeton, MA
 Project Number: P-0534017
 Project Manager: Jeff Aps/Michael Scherer

PROJECT INFORMATION:
 Pace Analytical Quote Name/Number: _____
 Invoice Recipient: Tigne & Bond
 Sampled By: M Scherer

ANALYSIS REQUESTED

Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
Greasey Spiky	10/16/21	1200	DW	U	2				

1 Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

2 Preservation Codes:
 1 = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

3 Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

4 Preservation Codes:
 1 = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

Special Requirements:
 MA MCP Required
 MCP Certification Form Required
 CT RCP Required
 RCP Certification Form Required
 MA State DW Required

Project Entity:
 Government
 Federal
 City
 Municipality
 21 J
 Brownfield
 MWRA
 School
 MBTA
 WRTA
 Other
 AHA-LAP, LLC

Client Comments: Please report the 14 compound list

Relinquished by (signature): [Signature] Date/Time: 10/16/21 1500
Received by (signature): [Signature] Date/Time: 10/15
Relinquished by (signature): [Signature] Date/Time: 10/19/21 1550
Received by (signature): [Signature] Date/Time: 10/19/21 1550

Comments: _____

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T E B
 Received By ML Date 10/19/21 Time 1550
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

Tighe&Bond

APPENDIX H

October 12, 2021

Michael Scherer
Tighe & Bond, Inc. - Worcester
120 Front St.
Worcester, MA 01608-2303

Project Location: Town Hall Campus, Princeton, MA
Client Job Number:
Project Number: P-0534
Laboratory Work Order Number: 2111232

Enclosed are results of analyses for samples as received by the laboratory on September 23, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager

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Tighe & Bond, Inc. - Worcester
 120 Front St.
 Worcester, MA 01608-2303
 ATTN: Michael Scherer

REPORT DATE: 10/12/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: P-0534

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 2111232

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: Town Hall Campus, Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-6	2111232-01	Ground Water		SOP-454 PFAS	
MW-7DRR	2111232-02	Ground Water		MADEP EPH rev 2.1 SOP-454 PFAS SW-846 8270E	
MW-10A	2111232-03	Ground Water		SOP-454 PFAS	
MW-10D	2111232-04	Ground Water		SOP-454 PFAS	
MW-14	2111232-05	Ground Water		SOP-454 PFAS	
MW-18R	2111232-06	Ground Water		MADEP EPH rev 2.1 SOP-454 PFAS SW-846 8270E	
MW-101	2111232-07	Ground Water		SOP-454 PFAS	
MW-102	2111232-08	Ground Water		SOP-454 PFAS	
Duplicate	2111232-09	Ground Water		SOP-454 PFAS	
Field Blank	2111232-10	Ground Water		SOP-454 PFAS	
Equipment Blank	2111232-11	Ground Water		SOP-454 PFAS	
Trip Blank	2111232-12	Ground Water		SOP-454 PFAS	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

For method 8270E, only a select list of PAHs was analyzed and reported in order to achieve lower detection limits than possible with EPH analysis.

MADEP EPH rev 2.1

Qualifications:

H-06

Sample was extracted past the recommended holding time.

Analyte & Samples(s) Qualified:

2111232-02RE1[MW-7DRR]

L-07A

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD outside of control limits. Reduced precision anticipated for any reported result for this compound.

Analyte & Samples(s) Qualified:

Naphthalene

B292023-BS1

R-05

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:

Naphthalene

2111232-02RE1[MW-7DRR], B292023-BLK1, B292023-BSD1

S-10

Sample was re-extracted outside of holding time since surrogate standard recovery was outside of control limits. Data from analysis performed outside of holding time is also reported since surrogate recovery is acceptable.

Analyte & Samples(s) Qualified:

Chlorooctadecane (COD)

2111232-02[MW-7DRR]

o-Terphenyl (OTP)

2111232-02[MW-7DRR]

S-26

Surrogate outside of control limits.

Analyte & Samples(s) Qualified:

Chlorooctadecane (COD)

B291262-BLK1

o-Terphenyl (OTP)

B291262-BLK1

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Daren J. Damboragian
Director of Operations

Project Location: Town Hall Campus, Princeton, M

Sample Description:

Work Order: 2111232

Date Received: 9/23/2021

Field Sample #: MW-6

Sampled: 9/22/2021 11:10

Sample ID: 2111232-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	8.6	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:15	JFC
Perfluorohexanoic acid (PFHxA)	5.6	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:15	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:15	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:15	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:15	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:15	JFC
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:15	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:15	JFC
N-EtFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:15	JFC
N-MeFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:15	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:15	JFC
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:15	JFC
Perfluorohexanesulfonic acid (PFHxS)	53	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:15	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:15	JFC
Perfluoroheptanoic acid (PFHpA)	3.5	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:15	JFC
Perfluorooctanoic acid (PFOA)	8.2	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:15	JFC
Perfluorooctanesulfonic acid (PFOS)	43	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:15	JFC
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:15	JFC

Project Location: Town Hall Campus, Princeton, M

Sample Description:

Work Order: 2111232

Date Received: 9/23/2021

Field Sample #: MW-7DRR

Sampled: 9/22/2021 09:00

Sample ID: 2111232-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzo(a)anthracene (SIM)	2.0	0.98	µg/L	1		SW-846 8270E	9/29/21	10/6/21 14:48	IMR
Benzo(a)pyrene (SIM)	2.5	0.20	µg/L	1		SW-846 8270E	9/29/21	10/6/21 14:48	IMR
Benzo(b)fluoranthene (SIM)	3.4	0.98	µg/L	1		SW-846 8270E	9/29/21	10/6/21 14:48	IMR
Benzo(k)fluoranthene (SIM)	1.1	0.98	µg/L	1		SW-846 8270E	9/29/21	10/6/21 14:48	IMR
Chrysene (SIM)	2.9	2.0	µg/L	1		SW-846 8270E	9/29/21	10/6/21 14:48	IMR
Dibenz(a,h)anthracene (SIM)	0.54	0.49	µg/L	1		SW-846 8270E	9/29/21	10/6/21 14:48	IMR
Indeno(1,2,3-cd)pyrene (SIM)	2.2	0.49	µg/L	1		SW-846 8270E	9/29/21	10/6/21 14:48	IMR
Surrogates	% Recovery		Recovery Limits		Flag/Qual				
o-Terphenyl (OTP)	33.1		30-130				10/6/21 14:48		

Project Location: Town Hall Campus, Princeton, M

Sample Description:

Work Order: 2111232

Date Received: 9/23/2021

Field Sample #: MW-7DRR

Sampled: 9/22/2021 09:00

Sample ID: 2111232-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	22	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:22	JFC
Perfluorohexanoic acid (PFHxA)	13	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:22	JFC
11Cl-PF3OUdS (F53B Minor)	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:22	JFC
9Cl-PF3ONS (F53B Major)	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:22	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:22	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:22	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:22	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:22	JFC
N-EtFOSAA	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:22	JFC
N-MeFOSAA	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:22	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:22	JFC
Perfluorotridecanoic acid (PFTTrDA)	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:22	JFC
Perfluorohexanesulfonic acid (PFHxS)	170	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:22	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:22	JFC
Perfluoroheptanoic acid (PFHpA)	5.6	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:22	JFC
Perfluorooctanoic acid (PFOA)	14	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:22	JFC
Perfluorooctanesulfonic acid (PFOS)	50	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:22	JFC
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:22	JFC

Project Location: Town Hall Campus, Princeton, M

Sample Description:

Work Order: 2111232

Date Received: 9/23/2021

Field Sample #: MW-7DRR

Sampled: 9/22/2021 09:00

Sample ID: 2111232-02

Sample Matrix: Ground Water

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	150	98	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:44	CJM
C9-C18 Aliphatics	ND	100	µg/L	1		MADEP EPH rev 2.1	10/8/21	10/11/21 11:56	CJM
C19-C36 Aliphatics	2100	98	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:44	CJM
C19-C36 Aliphatics	ND	100	µg/L	1		MADEP EPH rev 2.1	10/8/21	10/11/21 11:56	CJM
Unadjusted C11-C22 Aromatics	1400	98	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:44	CJM
Unadjusted C11-C22 Aromatics	ND	100	µg/L	1		MADEP EPH rev 2.1	10/8/21	10/11/21 11:56	CJM
C11-C22 Aromatics	1300	98	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:44	CJM
C11-C22 Aromatics	ND	100	µg/L	1		MADEP EPH rev 2.1	10/8/21	10/11/21 11:56	CJM
Acenaphthene	ND	2.0	µg/L	1		MADEP EPH rev 2.1	10/8/21	10/11/21 11:56	CJM
Acenaphthene	ND	2.0	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:44	CJM
Acenaphthylene	ND	2.0	µg/L	1		MADEP EPH rev 2.1	10/8/21	10/11/21 11:56	CJM
Acenaphthylene	ND	2.0	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:44	CJM
Anthracene	ND	2.0	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:44	CJM
Anthracene	ND	2.0	µg/L	1		MADEP EPH rev 2.1	10/8/21	10/11/21 11:56	CJM
Benzo(g,h,i)perylene	ND	2.0	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:44	CJM
Benzo(g,h,i)perylene	ND	2.0	µg/L	1		MADEP EPH rev 2.1	10/8/21	10/11/21 11:56	CJM
Fluoranthene	7.4	2.0	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:44	CJM
Fluoranthene	ND	2.0	µg/L	1		MADEP EPH rev 2.1	10/8/21	10/11/21 11:56	CJM
Fluorene	ND	2.0	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:44	CJM
Fluorene	ND	2.0	µg/L	1		MADEP EPH rev 2.1	10/8/21	10/11/21 11:56	CJM
2-Methylnaphthalene	4.4	2.0	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:44	CJM
2-Methylnaphthalene	ND	2.0	µg/L	1		MADEP EPH rev 2.1	10/8/21	10/11/21 11:56	CJM
Naphthalene	ND	2.0	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:44	CJM
Naphthalene	ND	2.0	µg/L	1	R-05	MADEP EPH rev 2.1	10/8/21	10/11/21 11:56	CJM
Phenanthrene	ND	2.0	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:44	CJM
Phenanthrene	ND	2.0	µg/L	1		MADEP EPH rev 2.1	10/8/21	10/11/21 11:56	CJM
Pyrene	5.4	2.0	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:44	CJM
Pyrene	ND	2.0	µg/L	1		MADEP EPH rev 2.1	10/8/21	10/11/21 11:56	CJM

Surrogates	% Recovery	Recovery Limits	Flag/Qual
Chlorooctadecane (COD)	22.8 *	40-140	S-10
Chlorooctadecane (COD)	45.2	40-140	
o-Terphenyl (OTP)	26.4 *	40-140	S-10
o-Terphenyl (OTP)	57.8	40-140	
2-Bromonaphthalene	111	40-140	
2-Bromonaphthalene	91.5	40-140	
2-Fluorobiphenyl	94.8	40-140	
2-Fluorobiphenyl	111	40-140	

Project Location: Town Hall Campus, Princeton, M

Sample Description:

Work Order: 2111232

Date Received: 9/23/2021

Field Sample #: MW-10A

Sampled: 9/21/2021 10:10

Sample ID: 2111232-03

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	4.1	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:29	JFC
Perfluorohexanoic acid (PFHxA)	4.4	4.1	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:29	JFC
11Cl-PF3OUdS (F53B Minor)	ND	4.1	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:29	JFC
9Cl-PF3ONS (F53B Major)	ND	4.1	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:29	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	4.1	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:29	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	4.1	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:29	JFC
Perfluorodecanoic acid (PFDA)	ND	4.1	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:29	JFC
Perfluorododecanoic acid (PFDoA)	ND	4.1	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:29	JFC
N-EtFOSAA	ND	4.1	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:29	JFC
N-MeFOSAA	ND	4.1	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:29	JFC
Perfluorotetradecanoic acid (PFTA)	ND	4.1	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:29	JFC
Perfluorotridecanoic acid (PFTTrDA)	ND	4.1	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:29	JFC
Perfluorohexanesulfonic acid (PFHxS)	15	4.1	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:29	JFC
Perfluoroundecanoic acid (PFUnA)	ND	4.1	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:29	JFC
Perfluoroheptanoic acid (PFHpA)	ND	4.1	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:29	JFC
Perfluorooctanoic acid (PFOA)	5.7	4.1	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:29	JFC
Perfluorooctanesulfonic acid (PFOS)	11	4.1	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:29	JFC
Perfluorononanoic acid (PFNA)	ND	4.1	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:29	JFC

Project Location: Town Hall Campus, Princeton, M

Sample Description:

Work Order: 2111232

Date Received: 9/23/2021

Field Sample #: MW-10D

Sampled: 9/21/2021 11:50

Sample ID: 2111232-04

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	10	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:37	JFC
Perfluorohexanoic acid (PFHxA)	3.3	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:37	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:37	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:37	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:37	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:37	JFC
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:37	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:37	JFC
N-EtFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:37	JFC
N-MeFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:37	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:37	JFC
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:37	JFC
Perfluorohexanesulfonic acid (PFHxS)	50	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:37	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:37	JFC
Perfluoroheptanoic acid (PFHpA)	3.7	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:37	JFC
Perfluorooctanoic acid (PFOA)	7.4	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:37	JFC
Perfluorooctanesulfonic acid (PFOS)	35	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:37	JFC
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:37	JFC

Project Location: Town Hall Campus, Princeton, M

Sample Description:

Work Order: 2111232

Date Received: 9/23/2021

Field Sample #: MW-14

Sampled: 9/21/2021 13:10

Sample ID: 2111232-05

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	24	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:44	JFC
Perfluorohexanoic acid (PFHxA)	28	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:44	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:44	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:44	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:44	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:44	JFC
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:44	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:44	JFC
N-EtFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:44	JFC
N-MeFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:44	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:44	JFC
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:44	JFC
Perfluorohexanesulfonic acid (PFHxS)	210	11	ng/L	1		SOP-454 PFAS	10/5/21	10/6/21 16:05	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:44	JFC
Perfluoroheptanoic acid (PFHpA)	14	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:44	JFC
Perfluorooctanoic acid (PFOA)	26	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:44	JFC
Perfluorooctanesulfonic acid (PFOS)	240	11	ng/L	1		SOP-454 PFAS	10/5/21	10/6/21 16:05	JFC
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:44	JFC

Project Location: Town Hall Campus, Princeton, M

Sample Description:

Work Order: 2111232

Date Received: 9/23/2021

Field Sample #: MW-18R

Sampled: 9/22/2021 10:30

Sample ID: 2111232-06

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzo(a)anthracene (SIM)	ND	0.97	µg/L	1		SW-846 8270E	9/29/21	10/6/21 13:52	IMR
Benzo(a)pyrene (SIM)	ND	0.19	µg/L	1		SW-846 8270E	9/29/21	10/6/21 13:52	IMR
Benzo(b)fluoranthene (SIM)	ND	0.97	µg/L	1		SW-846 8270E	9/29/21	10/6/21 13:52	IMR
Benzo(k)fluoranthene (SIM)	ND	0.97	µg/L	1		SW-846 8270E	9/29/21	10/6/21 13:52	IMR
Chrysene (SIM)	ND	1.9	µg/L	1		SW-846 8270E	9/29/21	10/6/21 13:52	IMR
Dibenz(a,h)anthracene (SIM)	ND	0.49	µg/L	1		SW-846 8270E	9/29/21	10/6/21 13:52	IMR
Indeno(1,2,3-cd)pyrene (SIM)	ND	0.49	µg/L	1		SW-846 8270E	9/29/21	10/6/21 13:52	IMR
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
o-Terphenyl (OTP)		62.7	30-130					10/6/21 13:52	

Project Location: Town Hall Campus, Princeton, M

Sample Description:

Work Order: 2111232

Date Received: 9/23/2021

Field Sample #: MW-18R

Sampled: 9/22/2021 10:30

Sample ID: 2111232-06

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	6.2	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:51	JFC
Perfluorohexanoic acid (PFHxA)	17	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:51	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:51	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:51	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:51	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:51	JFC
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:51	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:51	JFC
N-EtFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:51	JFC
N-MeFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:51	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:51	JFC
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:51	JFC
Perfluorohexanesulfonic acid (PFHxS)	27	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:51	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:51	JFC
Perfluoroheptanoic acid (PFHpA)	4.4	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:51	JFC
Perfluorooctanoic acid (PFOA)	5.3	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:51	JFC
Perfluorooctanesulfonic acid (PFOS)	8.3	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:51	JFC
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:51	JFC

Project Location: Town Hall Campus, Princeton, M

Sample Description:

Work Order: 2111232

Date Received: 9/23/2021

Field Sample #: MW-18R

Sampled: 9/22/2021 10:30

Sample ID: 2111232-06

Sample Matrix: Ground Water

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	ND	97	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:23	CJM
C19-C36 Aliphatics	ND	97	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:23	CJM
Unadjusted C11-C22 Aromatics	260	97	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:23	CJM
C11-C22 Aromatics	240	97	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:23	CJM
Acenaphthene	ND	1.9	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:23	CJM
Acenaphthylene	7.8	1.9	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:23	CJM
Anthracene	ND	1.9	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:23	CJM
Benzo(g,h,i)perylene	ND	1.9	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:23	CJM
Fluoranthene	ND	1.9	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:23	CJM
Fluorene	2.8	1.9	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:23	CJM
2-Methylnaphthalene	ND	1.9	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:23	CJM
Naphthalene	3.4	1.9	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:23	CJM
Phenanthrene	ND	1.9	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:23	CJM
Pyrene	ND	1.9	µg/L	1		MADEP EPH rev 2.1	9/29/21	10/6/21 12:23	CJM
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Chlorooctadecane (COD)		59.0	40-140					10/6/21 12:23	
o-Terphenyl (OTP)		71.3	40-140					10/6/21 12:23	
2-Bromonaphthalene		95.9	40-140					10/6/21 12:23	
2-Fluorobiphenyl		100	40-140					10/6/21 12:23	

Project Location: Town Hall Campus, Princeton, M

Sample Description:

Work Order: 2111232

Date Received: 9/23/2021

Field Sample #: MW-101

Sampled: 9/21/2021 09:15

Sample ID: 2111232-07

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	39	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:58	JFC
Perfluorohexanoic acid (PFHxA)	5.0	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:58	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:58	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:58	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:58	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:58	JFC
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:58	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:58	JFC
N-EtFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:58	JFC
N-MeFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:58	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:58	JFC
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:58	JFC
Perfluorohexanesulfonic acid (PFHxS)	340	21	ng/L	1		SOP-454 PFAS	10/5/21	10/6/21 16:12	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:58	JFC
Perfluoroheptanoic acid (PFHpA)	4.2	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:58	JFC
Perfluorooctanoic acid (PFOA)	12	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:58	JFC
Perfluorooctanesulfonic acid (PFOS)	150	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:58	JFC
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 18:58	JFC

Project Location: Town Hall Campus, Princeton, M

Sample Description:

Work Order: 2111232

Date Received: 9/23/2021

Field Sample #: MW-102

Sampled: 9/22/2021 12:30

Sample ID: 2111232-08

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	62	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:05	JFC
Perfluorohexanoic acid (PFHxA)	14	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:05	JFC
11Cl-PF3OUdS (F53B Minor)	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:05	JFC
9Cl-PF3ONS (F53B Major)	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:05	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:05	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:05	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:05	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:05	JFC
N-EtFOSAA	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:05	JFC
N-MeFOSAA	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:05	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:05	JFC
Perfluorotridecanoic acid (PFTTrDA)	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:05	JFC
Perfluorohexanesulfonic acid (PFHxS)	660	22	ng/L	1		SOP-454 PFAS	10/5/21	10/6/21 16:19	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:05	JFC
Perfluoroheptanoic acid (PFHpA)	7.2	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:05	JFC
Perfluorooctanoic acid (PFOA)	22	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:05	JFC
Perfluorooctanesulfonic acid (PFOS)	620	22	ng/L	1		SOP-454 PFAS	10/5/21	10/6/21 16:19	JFC
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:05	JFC

Project Location: Town Hall Campus, Princeton, M

Sample Description:

Work Order: 2111232

Date Received: 9/23/2021

Field Sample #: Duplicate

Sampled: 9/21/2021 13:15

Sample ID: 2111232-09

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	23	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:12	JFC
Perfluorohexanoic acid (PFHxA)	26	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:12	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:12	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:12	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:12	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:12	JFC
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:12	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:12	JFC
N-EtFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:12	JFC
N-MeFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:12	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:12	JFC
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:12	JFC
Perfluorohexanesulfonic acid (PFHxS)	220	11	ng/L	1		SOP-454 PFAS	10/5/21	10/6/21 16:26	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:12	JFC
Perfluoroheptanoic acid (PFHpA)	12	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:12	JFC
Perfluorooctanoic acid (PFOA)	25	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:12	JFC
Perfluorooctanesulfonic acid (PFOS)	240	11	ng/L	1		SOP-454 PFAS	10/5/21	10/6/21 16:26	JFC
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:12	JFC

Project Location: Town Hall Campus, Princeton, M

Sample Description:

Work Order: 2111232

Date Received: 9/23/2021

Field Sample #: Field Blank

Sampled: 9/21/2021 13:35

Sample ID: 2111232-10

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:20	JFC
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:20	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:20	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:20	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:20	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:20	JFC
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:20	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:20	JFC
N-EtFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:20	JFC
N-MeFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:20	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:20	JFC
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:20	JFC
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:20	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:20	JFC
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:20	JFC
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:20	JFC
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:20	JFC
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/4/21 19:20	JFC

Project Location: Town Hall Campus, Princeton, M

Sample Description:

Work Order: 2111232

Date Received: 9/23/2021

Field Sample #: Equipment Blank

Sampled: 9/21/2021 13:30

Sample ID: 2111232-11

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:47	JFC
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:47	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:47	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:47	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:47	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:47	JFC
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:47	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:47	JFC
N-EtFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:47	JFC
N-MeFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:47	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:47	JFC
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:47	JFC
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:47	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:47	JFC
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:47	JFC
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:47	JFC
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:47	JFC
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:47	JFC

Project Location: Town Hall Campus, Princeton, M

Sample Description:

Work Order: 2111232

Date Received: 9/23/2021

Field Sample #: Trip Blank

Sampled: 9/21/2021 00:00

Sample ID: 2111232-12

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:54	JFC
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:54	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:54	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:54	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:54	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:54	JFC
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:54	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:54	JFC
N-EtFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:54	JFC
N-MeFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:54	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:54	JFC
Perfluorotridecanoic acid (PFTTrDA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:54	JFC
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:54	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:54	JFC
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:54	JFC
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:54	JFC
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:54	JFC
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L	1		SOP-454 PFAS	9/27/21	10/5/21 14:54	JFC

Sample Extraction Data
Prep Method: SW-846 3510C Analytical Method: MADEP EPH rev 2.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21I1232-02 [MW-7DRR]	B291262	870	1.70	09/29/21
21I1232-06 [MW-18R]	B291262	1030	2.00	09/29/21

Prep Method: SW-846 3510C Analytical Method: MADEP EPH rev 2.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21I1232-02RE1 [MW-7DRR]	B292023	1000	2.00	10/08/21

Prep Method: SOP 454-PFAAS Analytical Method: SOP-454 PFAS

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21I1232-01 [MW-6]	B291083	259	1.00	09/27/21
21I1232-02 [MW-7DRR]	B291083	252	1.00	09/27/21
21I1232-03 [MW-10A]	B291083	122	1.00	09/27/21
21I1232-04 [MW-10D]	B291083	266	1.00	09/27/21
21I1232-05 [MW-14]	B291083	258	1.00	09/27/21
21I1232-06 [MW-18R]	B291083	258	1.00	09/27/21
21I1232-07 [MW-101]	B291083	257	1.00	09/27/21
21I1232-08 [MW-102]	B291083	246	1.00	09/27/21
21I1232-09 [Duplicate]	B291083	260	1.00	09/27/21
21I1232-10 [Field Blank]	B291083	263	1.00	09/27/21
21I1232-11 [Equipment Blank]	B291083	261	1.00	09/27/21
21I1232-12 [Trip Blank]	B291083	256	1.00	09/27/21

Prep Method: SOP 454-PFAAS Analytical Method: SOP-454 PFAS

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21I1232-05RE1 [MW-14]	B291755	45.0	1.00	10/05/21
21I1232-07RE1 [MW-101]	B291755	23.3	1.00	10/05/21
21I1232-08RE1 [MW-102]	B291755	22.8	1.00	10/05/21
21I1232-09RE1 [Duplicate]	B291755	47.5	1.00	10/05/21

Prep Method: SW-846 3510C Analytical Method: SW-846 8270E

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21I1232-02 [MW-7DRR]	B291378	870	1.70	09/29/21
21I1232-06 [MW-18R]	B291378	1030	2.00	09/29/21

QUALITY CONTROL
Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B291378 - SW-846 3510C										
Blank (B291378-BLK1)										
Prepared: 09/29/21 Analyzed: 10/04/21										
Benzo(a)anthracene (SIM)	ND	0.50	µg/L							
Benzo(a)pyrene (SIM)	ND	0.10	µg/L							
Benzo(b)fluoranthene (SIM)	ND	0.50	µg/L							
Benzo(k)fluoranthene (SIM)	ND	0.50	µg/L							
Chrysene (SIM)	ND	1.0	µg/L							
Dibenz(a,h)anthracene (SIM)	ND	0.25	µg/L							
Indeno(1,2,3-cd)pyrene (SIM)	ND	0.25	µg/L							
Surrogate: o-Terphenyl (OTP)	36.3		µg/L	100		36.3	30-130			
LCS (B291378-BS1)										
Prepared: 09/29/21 Analyzed: 10/04/21										
Benzo(a)anthracene (SIM)	87.8	20	µg/L	100		87.8	40-140			
Benzo(a)pyrene (SIM)	79.8	4.0	µg/L	100		79.8	40-140			
Benzo(b)fluoranthene (SIM)	92.4	20	µg/L	100		92.4	40-140			
Benzo(k)fluoranthene (SIM)	75.0	20	µg/L	100		75.0	40-140			
Chrysene (SIM)	93.1	40	µg/L	100		93.1	40-140			
Dibenz(a,h)anthracene (SIM)	81.8	10	µg/L	100		81.8	40-140			
Indeno(1,2,3-cd)pyrene (SIM)	82.0	10	µg/L	100		82.0	40-140			
Surrogate: o-Terphenyl (OTP)	78.7		µg/L	100		78.7	30-130			
LCS Dup (B291378-BSD1)										
Prepared: 09/29/21 Analyzed: 10/04/21										
Benzo(a)anthracene (SIM)	90.8	20	µg/L	100		90.8	40-140	3.36	20	
Benzo(a)pyrene (SIM)	83.2	4.0	µg/L	100		83.2	40-140	4.22	20	
Benzo(b)fluoranthene (SIM)	97.7	20	µg/L	100		97.7	40-140	5.56	20	
Benzo(k)fluoranthene (SIM)	77.0	20	µg/L	100		77.0	40-140	2.58	20	
Chrysene (SIM)	94.1	40	µg/L	100		94.1	40-140	1.11	20	
Dibenz(a,h)anthracene (SIM)	80.8	10	µg/L	100		80.8	40-140	1.23	20	
Indeno(1,2,3-cd)pyrene (SIM)	84.2	10	µg/L	100		84.2	40-140	2.74	20	
Surrogate: o-Terphenyl (OTP)	88.6		µg/L	100		88.6	30-130			

QUALITY CONTROL
Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B291083 - SOP 454-PFAAS
Blank (B291083-BLK1)

Prepared: 09/27/21 Analyzed: 10/04/21

Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	2.0	ng/L							
9Cl-PF3ONS (F53B Major)	ND	2.0	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	ng/L							
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L							
N-EtFOSAA	ND	2.0	ng/L							
N-MeFOSAA	ND	2.0	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L							
Perfluorooctanoic acid (PFOA)	ND	2.0	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L							
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L							

LCS (B291083-BS1)

Prepared: 09/27/21 Analyzed: 10/04/21

Perfluorobutanesulfonic acid (PFBS)	8.28	2.0	ng/L	8.76	94.4	72-130				
Perfluorohexanoic acid (PFHxA)	9.04	2.0	ng/L	9.90	91.3	72-129				
11Cl-PF3OUdS (F53B Minor)	7.92	2.0	ng/L	9.33	84.9	50-150				
9Cl-PF3ONS (F53B Major)	7.51	2.0	ng/L	9.23	81.4	50-150				
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	8.49	2.0	ng/L	9.33	91.1	50-150				
Hexafluoropropylene oxide dimer acid (HFPO-DA)	9.68	2.0	ng/L	9.90	97.8	50-150				
Perfluorodecanoic acid (PFDA)	8.50	2.0	ng/L	9.90	85.9	71-129				
Perfluorododecanoic acid (PFDoA)	8.77	2.0	ng/L	9.90	88.6	72-134				
N-EtFOSAA	10.6	2.0	ng/L	9.90	107	61-135				
N-MeFOSAA	8.85	2.0	ng/L	9.90	89.4	65-136				
Perfluorotetradecanoic acid (PFTA)	9.90	2.0	ng/L	9.90	99.9	71-132				
Perfluorotridecanoic acid (PFTrDA)	8.57	2.0	ng/L	9.90	86.6	65-144				
Perfluorohexanesulfonic acid (PFHxS)	7.94	2.0	ng/L	9.01	88.2	68-131				
Perfluoroundecanoic acid (PFUnA)	8.10	2.0	ng/L	9.90	81.8	69-133				
Perfluoroheptanoic acid (PFHpA)	9.88	2.0	ng/L	9.90	99.7	72-130				
Perfluorooctanoic acid (PFOA)	8.55	2.0	ng/L	9.90	86.3	71-133				
Perfluorooctanesulfonic acid (PFOS)	7.88	2.0	ng/L	9.16	86.0	65-140				
Perfluorononanoic acid (PFNA)	8.97	2.0	ng/L	9.90	90.6	69-130				

LCS Dup (B291083-BSD1)

Prepared: 09/27/21 Analyzed: 10/04/21

Perfluorobutanesulfonic acid (PFBS)	8.63	2.0	ng/L	8.98	96.0	72-130	4.12	30		
Perfluorohexanoic acid (PFHxA)	9.10	2.0	ng/L	10.2	89.7	72-129	0.727	30		
11Cl-PF3OUdS (F53B Minor)	7.60	2.0	ng/L	9.56	79.5	50-150	4.08	30		
9Cl-PF3ONS (F53B Major)	7.89	2.0	ng/L	9.46	83.4	50-150	4.89	30		
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	8.64	2.0	ng/L	9.56	90.3	50-150	1.67	30		
Hexafluoropropylene oxide dimer acid (HFPO-DA)	10.0	2.0	ng/L	10.2	98.8	50-150	3.49	30		
Perfluorodecanoic acid (PFDA)	8.31	2.0	ng/L	10.2	81.9	71-129	2.27	30		
Perfluorododecanoic acid (PFDoA)	8.95	2.0	ng/L	10.2	88.2	72-134	2.03	30		
N-EtFOSAA	10.3	2.0	ng/L	10.2	102	61-135	2.67	30		

QUALITY CONTROL
Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B291083 - SOP 454-PFAAS
LCS Dup (B291083-BSD1)

Prepared: 09/27/21 Analyzed: 10/04/21

N-MeFOSAA	9.30	2.0	ng/L	10.2		91.6	65-136	4.93	30	
Perfluorotetradecanoic acid (PFTA)	10.7	2.0	ng/L	10.2		105	71-132	7.52	30	
Perfluorotridecanoic acid (PFTrDA)	8.29	2.0	ng/L	10.2		81.7	65-144	3.37	30	
Perfluorohexanesulfonic acid (PFHxS)	8.25	2.0	ng/L	9.24		89.3	68-131	3.76	30	
Perfluoroundecanoic acid (PFUnA)	8.44	2.0	ng/L	10.2		83.1	69-133	4.07	30	
Perfluoroheptanoic acid (PFHpA)	10.5	2.0	ng/L	10.2		103	72-130	5.99	30	
Perfluorooctanoic acid (PFOA)	9.45	2.0	ng/L	10.2		93.1	71-133	10.1	30	
Perfluorooctanesulfonic acid (PFOS)	8.89	2.0	ng/L	9.39		94.7	65-140	12.0	30	
Perfluorononanoic acid (PFNA)	9.12	2.0	ng/L	10.2		89.8	69-130	1.58	30	

Batch B291755 - SOP 454-PFAAS
Blank (B291755-BLK1)

Prepared: 10/05/21 Analyzed: 10/06/21

Perfluorobutanesulfonic acid (PFBS)	ND	2.1	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	2.1	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	2.1	ng/L							
9Cl-PF3ONS (F53B Major)	ND	2.1	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.1	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.1	ng/L							
Perfluorodecanoic acid (PFDA)	ND	2.1	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	2.1	ng/L							
N-EtFOSAA	ND	2.1	ng/L							
N-MeFOSAA	ND	2.1	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	2.1	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	2.1	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	2.1	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	2.1	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	2.1	ng/L							
Perfluorooctanoic acid (PFOA)	ND	2.1	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	2.1	ng/L							
Perfluorononanoic acid (PFNA)	ND	2.1	ng/L							

LCS (B291755-BS1)

Prepared: 10/05/21 Analyzed: 10/06/21

Perfluorobutanesulfonic acid (PFBS)	7.12	2.0	ng/L	8.93		79.8	72-130			
Perfluorohexanoic acid (PFHxA)	7.58	2.0	ng/L	10.1		75.1	72-129			
11Cl-PF3OUdS (F53B Minor)	5.70	2.0	ng/L	9.50		60.0	50-150			
9Cl-PF3ONS (F53B Major)	7.03	2.0	ng/L	9.40		74.8	50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	6.69	2.0	ng/L	9.50		70.4	50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	5.97	2.0	ng/L	10.1		59.2	50-150			
Perfluorodecanoic acid (PFDA)	7.17	2.0	ng/L	10.1		71.1	71-129			
Perfluorododecanoic acid (PFDoA)	8.17	2.0	ng/L	10.1		81.0	72-134			
N-EtFOSAA	7.64	2.0	ng/L	10.1		75.7	61-135			
N-MeFOSAA	9.85	2.0	ng/L	10.1		97.6	65-136			
Perfluorotetradecanoic acid (PFTA)	8.62	2.0	ng/L	10.1		85.5	71-132			
Perfluorotridecanoic acid (PFTrDA)	7.59	2.0	ng/L	10.1		75.3	65-144			
Perfluorohexanesulfonic acid (PFHxS)	7.45	2.0	ng/L	9.18		81.2	68-131			
Perfluoroundecanoic acid (PFUnA)	7.31	2.0	ng/L	10.1		72.5	69-133			
Perfluoroheptanoic acid (PFHpA)	9.01	2.0	ng/L	10.1		89.3	72-130			
Perfluorooctanoic acid (PFOA)	7.21	2.0	ng/L	10.1		71.5	71-133			
Perfluorooctanesulfonic acid (PFOS)	7.37	2.0	ng/L	9.33		79.0	65-140			

QUALITY CONTROL
Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B291755 - SOP 454-PFAAS
LCS (B291755-BS1)

Prepared: 10/05/21 Analyzed: 10/06/21

Perfluorononanoic acid (PFNA)	7.70	2.0	ng/L	10.1		76.4	69-130			
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QUALITY CONTROL
Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B291262 - SW-846 3510C										
Blank (B291262-BLK1)										
Prepared: 09/29/21 Analyzed: 10/02/21										
C9-C18 Aliphatics	ND	100	µg/L							
C19-C36 Aliphatics	ND	100	µg/L							
Unadjusted C11-C22 Aromatics	ND	100	µg/L							
C11-C22 Aromatics	ND	100	µg/L							
Acenaphthene	ND	2.0	µg/L							
Acenaphthylene	ND	2.0	µg/L							
Anthracene	ND	2.0	µg/L							
Benzo(g,h,i)perylene	ND	2.0	µg/L							
Fluoranthene	ND	2.0	µg/L							
Fluorene	ND	2.0	µg/L							
2-Methylnaphthalene	ND	2.0	µg/L							
Naphthalene	ND	2.0	µg/L							
Phenanthrene	ND	2.0	µg/L							
Pyrene	ND	2.0	µg/L							
Naphthalene-aliphatic fraction	ND	2.0	µg/L							
2-Methylnaphthalene-aliphatic fraction	ND	2.0	µg/L							
Surrogate: Chlorooctadecane (COD)	24.9		µg/L	100		24.9	* 40-140			S-26
Surrogate: o-Terphenyl (OTP)	29.4		µg/L	100		29.4	* 40-140			S-26
Surrogate: 2-Bromonaphthalene	109		µg/L	100		109	40-140			
Surrogate: 2-Fluorobiphenyl	111		µg/L	100		111	40-140			
LCS (B291262-BS1)										
Prepared: 09/29/21 Analyzed: 10/02/21										
C9-C18 Aliphatics	393	100	µg/L	600		65.6	0-200			
C19-C36 Aliphatics	535	100	µg/L	800		66.8	0-200			
Unadjusted C11-C22 Aromatics	1240	100	µg/L	1700		73.1	0-200			
Acenaphthene	64.1	2.0	µg/L	100		64.1	40-140			
Acenaphthylene	60.9	2.0	µg/L	100		60.9	40-140			
Anthracene	63.4	2.0	µg/L	100		63.4	40-140			
Benzo(g,h,i)perylene	67.0	2.0	µg/L	100		67.0	40-140			
Fluoranthene	66.4	2.0	µg/L	100		66.4	40-140			
Fluorene	64.0	2.0	µg/L	100		64.0	40-140			
2-Methylnaphthalene	62.6	2.0	µg/L	100		62.6	40-140			
Naphthalene	58.9	2.0	µg/L	100		58.9	40-140			
Phenanthrene	65.8	2.0	µg/L	100		65.8	40-140			
Pyrene	67.9	2.0	µg/L	100		67.9	40-140			
Naphthalene-aliphatic fraction	ND	2.0	µg/L	100			0-5			
2-Methylnaphthalene-aliphatic fraction	ND	2.0	µg/L	100			0-5			
Surrogate: Chlorooctadecane (COD)	56.5		µg/L	100		56.5	40-140			
Surrogate: o-Terphenyl (OTP)	64.6		µg/L	100		64.6	40-140			
Surrogate: 2-Bromonaphthalene	105		µg/L	100		105	40-140			
Surrogate: 2-Fluorobiphenyl	108		µg/L	100		108	40-140			
LCS Dup (B291262-BSD1)										
Prepared: 09/29/21 Analyzed: 10/02/21										
C9-C18 Aliphatics	431	100	µg/L	600		71.9	0-200	9.17		
C19-C36 Aliphatics	618	100	µg/L	800		77.3	0-200	14.5		
Unadjusted C11-C22 Aromatics	1440	100	µg/L	1700		85.0	0-200	15.0		
Acenaphthene	76.1	2.0	µg/L	100		76.1	40-140	17.1	25	
Acenaphthylene	71.3	2.0	µg/L	100		71.3	40-140	15.7	25	
Anthracene	79.0	2.0	µg/L	100		79.0	40-140	22.0	25	
Benzo(g,h,i)perylene	77.5	2.0	µg/L	100		77.5	40-140	14.5	25	
Fluoranthene	82.5	2.0	µg/L	100		82.5	40-140	21.6	25	
Fluorene	78.1	2.0	µg/L	100		78.1	40-140	19.8	25	

QUALITY CONTROL
Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B291262 - SW-846 3510C										
LCS Dup (B291262-BSD1)										
Prepared: 09/29/21 Analyzed: 10/02/21										
2-Methylnaphthalene	69.6	2.0	µg/L	100		69.6	40-140	10.6	25	
Naphthalene	63.2	2.0	µg/L	100		63.2	40-140	7.09	25	
Phenanthrene	81.8	2.0	µg/L	100		81.8	40-140	21.6	25	
Pyrene	83.9	2.0	µg/L	100		83.9	40-140	21.0	25	
Naphthalene-aliphatic fraction	ND	2.0	µg/L	100			0-5			
2-Methylnaphthalene-aliphatic fraction	ND	2.0	µg/L	100			0-5			
Surrogate: Chlorooctadecane (COD)	66.0		µg/L	100		66.0	40-140			
Surrogate: o-Terphenyl (OTP)	81.4		µg/L	100		81.4	40-140			
Surrogate: 2-Bromonaphthalene	108		µg/L	100		108	40-140			
Surrogate: 2-Fluorobiphenyl	112		µg/L	100		112	40-140			
Batch B292023 - SW-846 3510C										
Blank (B292023-BLK1)										
Prepared: 10/08/21 Analyzed: 10/11/21										
C9-C18 Aliphatics	ND	100	µg/L							
C19-C36 Aliphatics	ND	100	µg/L							
Unadjusted C11-C22 Aromatics	ND	100	µg/L							
C11-C22 Aromatics	ND	100	µg/L							
Acenaphthene	ND	2.0	µg/L							
Acenaphthylene	ND	2.0	µg/L							
Anthracene	ND	2.0	µg/L							
Benzo(g,h,i)perylene	ND	2.0	µg/L							
Fluoranthene	ND	2.0	µg/L							
Fluorene	ND	2.0	µg/L							
2-Methylnaphthalene	ND	2.0	µg/L							
Naphthalene	ND	2.0	µg/L							R-05
Phenanthrene	ND	2.0	µg/L							
Pyrene	ND	2.0	µg/L							
Naphthalene-aliphatic fraction	ND	2.0	µg/L							
2-Methylnaphthalene-aliphatic fraction	ND	2.0	µg/L							
Surrogate: Chlorooctadecane (COD)	56.1		µg/L	100		56.1	40-140			
Surrogate: o-Terphenyl (OTP)	69.2		µg/L	100		69.2	40-140			
Surrogate: 2-Bromonaphthalene	95.5		µg/L	100		95.5	40-140			
Surrogate: 2-Fluorobiphenyl	96.5		µg/L	100		96.5	40-140			
LCS (B292023-BS1)										
Prepared: 10/08/21 Analyzed: 10/11/21										
C9-C18 Aliphatics	334	100	µg/L	600		55.7	0-200			
C19-C36 Aliphatics	533	100	µg/L	800		66.6	0-200			
Unadjusted C11-C22 Aromatics	1210	100	µg/L	1700		70.9	0-200			
Acenaphthene	60.2	2.0	µg/L	100		60.2	40-140			
Acenaphthylene	55.4	2.0	µg/L	100		55.4	40-140			
Anthracene	65.9	2.0	µg/L	100		65.9	40-140			
Benzo(g,h,i)perylene	66.7	2.0	µg/L	100		66.7	40-140			
Fluoranthene	69.7	2.0	µg/L	100		69.7	40-140			
Fluorene	62.5	2.0	µg/L	100		62.5	40-140			
2-Methylnaphthalene	48.8	2.0	µg/L	100		48.8	40-140			
Naphthalene	38.1	2.0	µg/L	100		38.1	* 40-140			L-07A
Phenanthrene	68.0	2.0	µg/L	100		68.0	40-140			
Pyrene	71.0	2.0	µg/L	100		71.0	40-140			
Naphthalene-aliphatic fraction	ND	2.0	µg/L	100			0-5			
2-Methylnaphthalene-aliphatic fraction	ND	2.0	µg/L	100			0-5			
Surrogate: Chlorooctadecane (COD)	54.7		µg/L	100		54.7	40-140			

QUALITY CONTROL
Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292023 - SW-846 3510C										
LCS (B292023-BS1)					Prepared: 10/08/21 Analyzed: 10/11/21					
Surrogate: o-Terphenyl (OTP)	68.8		µg/L	100		68.8	40-140			
Surrogate: 2-Bromonaphthalene	103		µg/L	100		103	40-140			
Surrogate: 2-Fluorobiphenyl	106		µg/L	100		106	40-140			
LCS Dup (B292023-BSD1)					Prepared: 10/08/21 Analyzed: 10/11/21					
C9-C18 Aliphatics	372	100	µg/L	600		61.9	0-200	10.5		
C19-C36 Aliphatics	519	100	µg/L	800		64.9	0-200	2.62		
Unadjusted C11-C22 Aromatics	1300	100	µg/L	1700		76.5	0-200	7.66		
Acenaphthene	68.0	2.0	µg/L	100		68.0	40-140	12.2	25	
Acenaphthylene	63.9	2.0	µg/L	100		63.9	40-140	14.2	25	
Anthracene	71.8	2.0	µg/L	100		71.8	40-140	8.63	25	
Benzo(g,h,i)perylene	70.1	2.0	µg/L	100		70.1	40-140	4.96	25	
Fluoranthene	75.1	2.0	µg/L	100		75.1	40-140	7.39	25	
Fluorene	68.6	2.0	µg/L	100		68.6	40-140	9.32	25	
2-Methylnaphthalene	61.3	2.0	µg/L	100		61.3	40-140	22.6	25	
Naphthalene	54.6	2.0	µg/L	100		54.6	40-140	35.6 *	25	R-05
Phenanthrene	73.8	2.0	µg/L	100		73.8	40-140	8.25	25	
Pyrene	76.4	2.0	µg/L	100		76.4	40-140	7.28	25	
Naphthalene-aliphatic fraction	ND	2.0	µg/L	100			0-5			
2-Methylnaphthalene-aliphatic fraction	ND	2.0	µg/L	100			0-5			
Surrogate: Chlorooctadecane (COD)	55.8		µg/L	100		55.8	40-140			
Surrogate: o-Terphenyl (OTP)	73.3		µg/L	100		73.3	40-140			
Surrogate: 2-Bromonaphthalene	109		µg/L	100		109	40-140			
Surrogate: 2-Fluorobiphenyl	112		µg/L	100		112	40-140			

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
H-06	Sample was extracted past the recommended holding time.
L-07A	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD outside of control limits. Reduced precision anticipated for any reported result for this compound.
R-05	Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
S-10	Sample was re-extracted outside of holding time since surrogate standard recovery was outside of control limits.
S-26	Data from analysis performed outside of holding time is also reported since surrogate recovery is acceptable. Surrogate outside of control limits.

INTERNAL STANDARD AREA AND RT SUMMARY
SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-6 (21I1232-01)									
Lab File ID: 21I1232-01.d				Analyzed: 10/04/21 18:15					
M2PFTA	797380.1	4.4191	1,119,526.00	4.4191	71	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	111240.7	2.929717	209,335.00	2.970317	53	50 - 150	-0.0406	+/-0.50	
M6PFDA	413737.3	3.86735	607,305.00	3.883583	68	50 - 150	-0.0162	+/-0.50	
M3PFBS	125008.7	1.978033	125,261.00	2.035933	100	50 - 150	-0.0579	+/-0.50	
M7PFUnA	492283	4.017983	807,482.00	4.033967	61	50 - 150	-0.0160	+/-0.50	
M5PFHxA	597644.3	2.68875	689,484.00	2.755417	87	50 - 150	-0.0667	+/-0.50	
M3PFHxS	77574.76	3.276217	91,307.00	3.300333	85	50 - 150	-0.0241	+/-0.50	
M4PFHpA	507534.2	3.243783	650,275.00	3.268033	78	50 - 150	-0.0242	+/-0.50	
M8PFOA	425229	3.51815	638,929.00	3.534133	67	50 - 150	-0.0160	+/-0.50	
M8PFOS	74030.55	3.7083	109,418.00	3.716267	68	50 - 150	-0.0080	+/-0.50	
M9PFNA	335590.9	3.7093	604,754.00	3.717267	55	50 - 150	-0.0080	+/-0.50	
MPFDoA	483981.5	4.1612	856,091.00	4.177333	57	50 - 150	-0.0161	+/-0.50	
d5-NEtFOSAA	101232.2	4.02545	195,886.00	4.041433	52	50 - 150	-0.0160	+/-0.50	
d3-NMeFOSAA	135716.5	3.945883	218,352.00	3.961867	62	50 - 150	-0.0160	+/-0.50	
MW-7DRR (21I1232-02)									
Lab File ID: 21I1232-02.d				Analyzed: 10/04/21 18:22					
M2PFTA	1160706	4.4191	1,119,526.00	4.4191	104	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	149105.2	2.9622	209,335.00	2.970317	71	50 - 150	-0.0081	+/-0.50	
M6PFDA	685605	3.8756	607,305.00	3.883583	113	50 - 150	-0.0080	+/-0.50	
M3PFBS	145896.6	2.02765	125,261.00	2.035933	116	50 - 150	-0.0083	+/-0.50	
M7PFUnA	880305.6	4.033967	807,482.00	4.033967	109	50 - 150	0.0000	+/-0.50	
M5PFHxA	798550.2	2.747233	689,484.00	2.755417	116	50 - 150	-0.0082	+/-0.50	
M3PFHxS	99837.96	3.300333	91,307.00	3.300333	109	50 - 150	0.0000	+/-0.50	
M4PFHpA	748857.3	3.268033	650,275.00	3.268033	115	50 - 150	0.0000	+/-0.50	
M8PFOA	696036.4	3.534133	638,929.00	3.534133	109	50 - 150	0.0000	+/-0.50	
M8PFOS	105967.7	3.716267	109,418.00	3.716267	97	50 - 150	0.0000	+/-0.50	
M9PFNA	594096.8	3.717267	604,754.00	3.717267	98	50 - 150	0.0000	+/-0.50	
MPFDoA	910858.5	4.17735	856,091.00	4.177333	106	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	197516.1	4.041433	195,886.00	4.041433	101	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	213593.4	3.953867	218,352.00	3.961867	98	50 - 150	-0.0080	+/-0.50	
Phenanthrene-d10	25814	10.86	24,613.00	10.857	105	50 - 200	0.0030	+/-0.50	
Phenanthrene-d10 (SIM)	47969	10.858	45,820.00	10.858	105	50 - 200	0.0000	+/-0.50	
Chrysene-d12 (SIM)	44854	14.407	42,483.00	14.399	106	50 - 200	0.0080	+/-0.50	
Perylene-d12 (SIM)	50779	17.675	44,356.00	17.659	114	50 - 200	0.0160	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-10A (2111232-03)			Lab File ID: 2111232-03.d		Analyzed: 10/04/21 18:29				
M2PFTA	1192254	4.4191	1,119,526.00	4.4191	106	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	141124.7	2.9622	209,335.00	2.970317	67	50 - 150	-0.0081	+/-0.50	
M6PFDA	668403.6	3.8756	607,305.00	3.883583	110	50 - 150	-0.0080	+/-0.50	
M3PFBS	136273.7	2.019367	125,261.00	2.035933	109	50 - 150	-0.0166	+/-0.50	
M7PFUnA	939919.1	4.033967	807,482.00	4.033967	116	50 - 150	0.0000	+/-0.50	
M5PFHxA	789180.6	2.73905	689,484.00	2.755417	114	50 - 150	-0.0164	+/-0.50	
M3PFHxS	98746.31	3.2923	91,307.00	3.300333	108	50 - 150	-0.0080	+/-0.50	
M4PFHpA	725306.9	3.25995	650,275.00	3.268033	112	50 - 150	-0.0081	+/-0.50	
M8PFOA	675713	3.534133	638,929.00	3.534133	106	50 - 150	0.0000	+/-0.50	
M8PFOS	105504.8	3.716267	109,418.00	3.716267	96	50 - 150	0.0000	+/-0.50	
M9PFNA	589642.4	3.717267	604,754.00	3.717267	98	50 - 150	0.0000	+/-0.50	
MPFDoA	950721.5	4.17735	856,091.00	4.177333	111	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	221266.8	4.041433	195,886.00	4.041433	113	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	251730.6	3.961867	218,352.00	3.961867	115	50 - 150	0.0000	+/-0.50	
MW-10D (2111232-04)			Lab File ID: 2111232-04.d		Analyzed: 10/04/21 18:37				
M2PFTA	936719	4.4191	1,119,526.00	4.4191	84	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	124501.6	2.954083	209,335.00	2.970317	59	50 - 150	-0.0162	+/-0.50	
M6PFDA	550743.4	3.8756	607,305.00	3.883583	91	50 - 150	-0.0080	+/-0.50	
M3PFBS	130206.5	2.002783	125,261.00	2.035933	104	50 - 150	-0.0332	+/-0.50	
M7PFUnA	759855.3	4.033967	807,482.00	4.033967	94	50 - 150	0.0000	+/-0.50	
M5PFHxA	711811.1	2.722683	689,484.00	2.755417	103	50 - 150	-0.0327	+/-0.50	
M3PFHxS	91458.11	3.2923	91,307.00	3.300333	100	50 - 150	-0.0080	+/-0.50	
M4PFHpA	641100.9	3.25995	650,275.00	3.268033	99	50 - 150	-0.0081	+/-0.50	
M8PFOA	560818.1	3.52615	638,929.00	3.534133	88	50 - 150	-0.0080	+/-0.50	
M8PFOS	93556.63	3.716267	109,418.00	3.716267	86	50 - 150	0.0000	+/-0.50	
M9PFNA	452564.8	3.717267	604,754.00	3.717267	75	50 - 150	0.0000	+/-0.50	
MPFDoA	729623.6	4.169267	856,091.00	4.177333	85	50 - 150	-0.0081	+/-0.50	
d5-NEtFOSAA	151145.5	4.041433	195,886.00	4.041433	77	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	152501.4	3.953867	218,352.00	3.961867	70	50 - 150	-0.0080	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-14 (21I1232-05)									
Lab File ID: 21I1232-05.d					Analyzed: 10/04/21 18:44				
M2PFTA	746948.3	4.4191	1,119,526.00	4.4191	67	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	182423.2	2.9622	209,335.00	2.970317	87	50 - 150	-0.0081	+/-0.50	
M6PFDA	670378	3.8756	607,305.00	3.883583	110	50 - 150	-0.0080	+/-0.50	
M3PFBS	143843.9	2.019367	125,261.00	2.035933	115	50 - 150	-0.0166	+/-0.50	
M7PFUnA	852601.2	4.033967	807,482.00	4.033967	106	50 - 150	0.0000	+/-0.50	
M5PFHxA	815554.6	2.73905	689,484.00	2.755417	118	50 - 150	-0.0164	+/-0.50	
M3PFHxS	99295.01	3.2923	91,307.00	3.300333	109	50 - 150	-0.0080	+/-0.50	
M4PFHpA	759773.9	3.268033	650,275.00	3.268033	117	50 - 150	0.0000	+/-0.50	
M8PFOA	737028.4	3.534133	638,929.00	3.534133	115	50 - 150	0.0000	+/-0.50	
M8PFOS	110332.6	3.716267	109,418.00	3.716267	101	50 - 150	0.0000	+/-0.50	
M9PFNA	579197.2	3.717267	604,754.00	3.717267	96	50 - 150	0.0000	+/-0.50	
MPFDoA	800652.1	4.17735	856,091.00	4.177333	94	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	213558.9	4.041433	195,886.00	4.041433	109	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	216825.4	3.961867	218,352.00	3.961867	99	50 - 150	0.0000	+/-0.50	
MW-14 (21I1232-05RE1)									
Lab File ID: 21I1232-05RE1.d					Analyzed: 10/06/21 16:05				
M3PFHxS	126592.9	3.308383	94,481.00	3.308383	134	50 - 150	0.0000	+/-0.50	
M8PFOS	144666.9	3.724233	105,684.00	3.724233	137	50 - 150	0.0000	+/-0.50	
MW-18R (21I1232-06)									
Lab File ID: 21I1232-06.d					Analyzed: 10/04/21 18:51				
M2PFTA	564606.8	4.4191	1,119,526.00	4.4191	50	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	120447.5	2.954083	209,335.00	2.970317	58	50 - 150	-0.0162	+/-0.50	
M6PFDA	518855.4	3.8756	607,305.00	3.883583	85	50 - 150	-0.0080	+/-0.50	
M3PFBS	130855.2	2.011067	125,261.00	2.035933	104	50 - 150	-0.0249	+/-0.50	
M7PFUnA	670329.9	4.033967	807,482.00	4.033967	83	50 - 150	0.0000	+/-0.50	
M5PFHxA	726198.3	2.730867	689,484.00	2.755417	105	50 - 150	-0.0246	+/-0.50	
M3PFHxS	89119.87	3.2923	91,307.00	3.300333	98	50 - 150	-0.0080	+/-0.50	
M4PFHpA	653371.5	3.25995	650,275.00	3.268033	100	50 - 150	-0.0081	+/-0.50	
M8PFOA	549016.7	3.52615	638,929.00	3.534133	86	50 - 150	-0.0080	+/-0.50	
M8PFOS	85538.11	3.716267	109,418.00	3.716267	78	50 - 150	0.0000	+/-0.50	
M9PFNA	474210	3.717267	604,754.00	3.717267	78	50 - 150	0.0000	+/-0.50	
MPFDoA	572216.3	4.169283	856,091.00	4.177333	67	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	167916.6	4.041433	195,886.00	4.041433	86	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	160893	3.953867	218,352.00	3.961867	74	50 - 150	-0.0080	+/-0.50	
Phenanthrene-d10	28705	10.86	24,613.00	10.857	117	50 - 200	0.0030	+/-0.50	
Phenanthrene-d10 (SIM)	51181	10.858	45,820.00	10.858	112	50 - 200	0.0000	+/-0.50	
Chrysene-d12 (SIM)	45979	14.402	42,483.00	14.399	108	50 - 200	0.0030	+/-0.50	
Perylene-d12 (SIM)	48621	17.66	44,356.00	17.659	110	50 - 200	0.0010	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-101 (2111232-07)									
Lab File ID: 2111232-07.d					Analyzed: 10/04/21 18:58				
M2PFTA	1067069	4.4191	1,119,526.00	4.4191	95	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	153479.6	2.9622	209,335.00	2.970317	73	50 - 150	-0.0081	+/-0.50	
M6PFDA	703490.7	3.883583	607,305.00	3.883583	116	50 - 150	0.0000	+/-0.50	
M3PFBS	142813.7	2.019367	125,261.00	2.035933	114	50 - 150	-0.0166	+/-0.50	
M7PFUnA	938810.1	4.033967	807,482.00	4.033967	116	50 - 150	0.0000	+/-0.50	
M5PFHxA	823186.3	2.73905	689,484.00	2.755417	119	50 - 150	-0.0164	+/-0.50	
M3PFHxS	95630.06	3.300333	91,307.00	3.300333	105	50 - 150	0.0000	+/-0.50	
M4PFHpA	773798.3	3.268033	650,275.00	3.268033	119	50 - 150	0.0000	+/-0.50	
M8PFOA	747185.9	3.534133	638,929.00	3.534133	117	50 - 150	0.0000	+/-0.50	
M8PFOS	110887.3	3.716267	109,418.00	3.716267	101	50 - 150	0.0000	+/-0.50	
M9PFNA	639962.3	3.717267	604,754.00	3.717267	106	50 - 150	0.0000	+/-0.50	
MPFDoA	963087	4.17735	856,091.00	4.177333	112	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	184750.2	4.041433	195,886.00	4.041433	94	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	237266.6	3.961867	218,352.00	3.961867	109	50 - 150	0.0000	+/-0.50	
MW-101 (2111232-07RE1)									
Lab File ID: 2111232-07RE1.d					Analyzed: 10/06/21 16:12				
M3PFHxS	137630.9	3.308383	94,481.00	3.308383	146	50 - 150	0.0000	+/-0.50	
MW-102 (2111232-08)									
Lab File ID: 2111232-08.d					Analyzed: 10/04/21 19:05				
M2PFTA	856602.7	4.4191	1,119,526.00	4.4191	77	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	147071.8	2.9622	209,335.00	2.970317	70	50 - 150	-0.0081	+/-0.50	
M6PFDA	705988.9	3.8756	607,305.00	3.883583	116	50 - 150	-0.0080	+/-0.50	
M3PFBS	145978.1	2.019367	125,261.00	2.035933	117	50 - 150	-0.0166	+/-0.50	
M7PFUnA	933857.2	4.033967	807,482.00	4.033967	116	50 - 150	0.0000	+/-0.50	
M5PFHxA	815401.3	2.73905	689,484.00	2.755417	118	50 - 150	-0.0164	+/-0.50	
M3PFHxS	90804.32	3.2923	91,307.00	3.300333	99	50 - 150	-0.0080	+/-0.50	
M4PFHpA	784273.1	3.268033	650,275.00	3.268033	121	50 - 150	0.0000	+/-0.50	
M8PFOA	733528.3	3.534133	638,929.00	3.534133	115	50 - 150	0.0000	+/-0.50	
M8PFOS	101525.9	3.716267	109,418.00	3.716267	93	50 - 150	0.0000	+/-0.50	
M9PFNA	527043.3	3.717267	604,754.00	3.717267	87	50 - 150	0.0000	+/-0.50	
MPFDoA	841053.2	4.169267	856,091.00	4.177333	98	50 - 150	-0.0081	+/-0.50	
d5-NEtFOSAA	178958.3	4.03345	195,886.00	4.041433	91	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	222433.9	3.953867	218,352.00	3.961867	102	50 - 150	-0.0080	+/-0.50	
MW-102 (2111232-08RE1)									
Lab File ID: 2111232-08RE1.d					Analyzed: 10/06/21 16:19				
M3PFHxS	119631.7	3.308383	94,481.00	3.308383	127	50 - 150	0.0000	+/-0.50	
M8PFOS	131415.2	3.724233	105,684.00	3.724233	124	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Duplicate (21I1232-09)									
			Lab File ID: 21I1232-09.d			Analyzed: 10/04/21 19:12			
M2PFTA	715781.7	4.4191	1,119,526.00	4.4191	64	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	156472.5	2.9622	209,335.00	2.970317	75	50 - 150	-0.0081	+/-0.50	
M6PFDA	706865.6	3.8756	607,305.00	3.883583	116	50 - 150	-0.0080	+/-0.50	
M3PFBS	154546.3	2.019367	125,261.00	2.035933	123	50 - 150	-0.0166	+/-0.50	
M7PFUnA	927925.4	4.033967	807,482.00	4.033967	115	50 - 150	0.0000	+/-0.50	
M5PFHxA	857185.8	2.73905	689,484.00	2.755417	124	50 - 150	-0.0164	+/-0.50	
M3PFHxS	106293.9	3.2923	91,307.00	3.300333	116	50 - 150	-0.0080	+/-0.50	
M4PFHpA	829917.3	3.268033	650,275.00	3.268033	128	50 - 150	0.0000	+/-0.50	
M8PFOA	734300.9	3.534133	638,929.00	3.534133	115	50 - 150	0.0000	+/-0.50	
M8PFOS	107546.4	3.716267	109,418.00	3.716267	98	50 - 150	0.0000	+/-0.50	
M9PFNA	623987.8	3.717267	604,754.00	3.717267	103	50 - 150	0.0000	+/-0.50	
MPFDoA	813233.8	4.17735	856,091.00	4.177333	95	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	180729.9	4.041433	195,886.00	4.041433	92	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	240909.7	3.961867	218,352.00	3.961867	110	50 - 150	0.0000	+/-0.50	
Duplicate (21I1232-09RE1)									
			Lab File ID: 21I1232-09RE1.d			Analyzed: 10/06/21 16:26			
M3PFHxS	123605.4	3.308383	94,481.00	3.308383	131	50 - 150	0.0000	+/-0.50	
M8PFOS	144180	3.724233	105,684.00	3.724233	136	50 - 150	0.0000	+/-0.50	
Field Blank (21I1232-10)									
			Lab File ID: 21I1232-10.d			Analyzed: 10/04/21 19:20			
M2PFTA	1110455	4.4191	1,119,526.00	4.4191	99	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	226506.4	2.9622	209,335.00	2.970317	108	50 - 150	-0.0081	+/-0.50	
M6PFDA	747135.9	3.883583	607,305.00	3.883583	123	50 - 150	0.0000	+/-0.50	
M3PFBS	146087.6	2.02765	125,261.00	2.035933	117	50 - 150	-0.0083	+/-0.50	
M7PFUnA	931028.8	4.033967	807,482.00	4.033967	115	50 - 150	0.0000	+/-0.50	
M5PFHxA	807226.3	2.747233	689,484.00	2.755417	117	50 - 150	-0.0082	+/-0.50	
M3PFHxS	104152.5	3.300333	91,307.00	3.300333	114	50 - 150	0.0000	+/-0.50	
M4PFHpA	781552.6	3.268033	650,275.00	3.268033	120	50 - 150	0.0000	+/-0.50	
M8PFOA	748303.9	3.534133	638,929.00	3.534133	117	50 - 150	0.0000	+/-0.50	
M8PFOS	113223.7	3.716267	109,418.00	3.716267	103	50 - 150	0.0000	+/-0.50	
M9PFNA	688559.6	3.71725	604,754.00	3.717267	114	50 - 150	0.0000	+/-0.50	
MPFDoA	887053.1	4.177333	856,091.00	4.177333	104	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	179621.3	4.041433	195,886.00	4.041433	92	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	229085.2	3.961867	218,352.00	3.961867	105	50 - 150	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Equipment Blank (21I1232-11)									
			Lab File ID: 21I1232-11.d			Analyzed: 10/05/21 14:47			
M2PFTA	1040347	4.4191	1,229,534.00	4.4191	85	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	188464.6	2.954083	249,705.00	2.954083	75	50 - 150	0.0000	+/-0.50	
M6PFDA	621471.9	3.8756	670,438.00	3.8756	93	50 - 150	0.0000	+/-0.50	
M3PFBS	142045	2.019367	142,754.00	2.019367	100	50 - 150	0.0000	+/-0.50	
M7PFUnA	779841	4.025967	943,412.00	4.025967	83	50 - 150	0.0000	+/-0.50	
M5PFHxA	775869.3	2.73905	757,262.00	2.730867	102	50 - 150	0.0082	+/-0.50	
M3PFHxS	98649.4	3.2923	100,664.00	3.2923	98	50 - 150	0.0000	+/-0.50	
M4PFHpA	741279.7	3.25995	735,555.00	3.25995	101	50 - 150	0.0000	+/-0.50	
M8PFOA	670701.5	3.52615	711,310.00	3.52615	94	50 - 150	0.0000	+/-0.50	
M8PFOS	114839.5	3.716267	107,970.00	3.716267	106	50 - 150	0.0000	+/-0.50	
M9PFNA	682745.8	3.71725	643,689.00	3.71725	106	50 - 150	0.0000	+/-0.50	
MPFDoA	794552.8	4.169267	889,030.00	4.169267	89	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	186637.8	4.03345	197,374.00	4.03345	95	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	238798.5	3.953867	245,100.00	3.953867	97	50 - 150	0.0000	+/-0.50	
Trip Blank (21I1232-12)									
			Lab File ID: 21I1232-12.d			Analyzed: 10/05/21 14:54			
M2PFTA	1416975	4.4191	1,229,534.00	4.4191	115	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	210708.5	2.954083	249,705.00	2.954083	84	50 - 150	0.0000	+/-0.50	
M6PFDA	769808.4	3.8756	670,438.00	3.8756	115	50 - 150	0.0000	+/-0.50	
M3PFBS	174127.7	2.019367	142,754.00	2.019367	122	50 - 150	0.0000	+/-0.50	
M7PFUnA	1061932	4.025967	943,412.00	4.025967	113	50 - 150	0.0000	+/-0.50	
M5PFHxA	939561.1	2.730867	757,262.00	2.730867	124	50 - 150	0.0000	+/-0.50	
M3PFHxS	122823.7	3.2923	100,664.00	3.2923	122	50 - 150	0.0000	+/-0.50	
M4PFHpA	889193.1	3.25995	735,555.00	3.25995	121	50 - 150	0.0000	+/-0.50	
M8PFOA	894696.3	3.52615	711,310.00	3.52615	126	50 - 150	0.0000	+/-0.50	
M8PFOS	129422.2	3.716267	107,970.00	3.716267	120	50 - 150	0.0000	+/-0.50	
M9PFNA	780855.7	3.71725	643,689.00	3.71725	121	50 - 150	0.0000	+/-0.50	
MPFDoA	1037497	4.169267	889,030.00	4.169267	117	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	227917.8	4.033433	197,374.00	4.03345	115	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	282903.4	3.953867	245,100.00	3.953867	115	50 - 150	0.0000	+/-0.50	
Blank (B291378-BLK1)									
			Lab File ID: H21S277018.D			Analyzed: 10/04/21 15:00			
Phenanthrene-d10	12247	8.227	17,639.00	8.227	69	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10 (SIM)	24517	8.225	34,550.00	8.228	71	50 - 200	-0.0030	+/-0.50	
Chrysene-d12 (SIM)	18984	11.227	27,322.00	11.229	69	50 - 200	-0.0020	+/-0.50	
Perylene-d12 (SIM)	18859	13.861	26,599.00	13.861	71	50 - 200	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
SW-846 8270E

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B291378-BS1)			Lab File ID: H21S277010.D			Analyzed: 10/04/21 11:56			
Phenanthrene-d10	14446	8.227	17,639.00	8.227	82	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10 (SIM)	27146	8.228	34,550.00	8.228	79	50 - 200	0.0000	+/-0.50	
Chrysene-d12 (SIM)	21665	11.226	27,322.00	11.229	79	50 - 200	-0.0030	+/-0.50	
Perylene-d12 (SIM)	21203	13.859	26,599.00	13.861	80	50 - 200	-0.0020	+/-0.50	
LCS Dup (B291378-BSD1)			Lab File ID: H21S277011.D			Analyzed: 10/04/21 12:18			
Phenanthrene-d10	14834	8.227	17,639.00	8.227	84	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10 (SIM)	29987	8.225	34,550.00	8.228	87	50 - 200	-0.0030	+/-0.50	
Chrysene-d12 (SIM)	25162	11.227	27,322.00	11.229	92	50 - 200	-0.0020	+/-0.50	
Perylene-d12 (SIM)	24737	13.859	26,599.00	13.861	93	50 - 200	-0.0020	+/-0.50	

CERTIFICATIONS
Certified Analyses included in this Report

Analyte	Certifications
<i>MADEP EPH rev 2.1 in Water</i>	
C9-C18 Aliphatics	CT,NC,ME,NH-P
C19-C36 Aliphatics	CT,NC,ME,NH-P
Unadjusted C11-C22 Aromatics	CT,NC,ME,NH-P
C11-C22 Aromatics	CT,NC,ME,NH-P
Acenaphthene	CT,NC,ME,NH-P
Acenaphthylene	CT,NC,ME,NH-P
Anthracene	CT,NC,ME,NH-P
Benzo(g,h,i)perylene	CT,NC,ME,NH-P
Fluoranthene	CT,NC,ME,NH-P
Fluorene	CT,NC,ME
2-Methylnaphthalene	CT,NC
Naphthalene	CT,NC,ME,NH-P
Phenanthrene	CT,NC,ME,NH-P
Pyrene	CT,NC,ME,NH-P
<i>SOP-454 PFAS in Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
11Cl-PF3OUdS (F53B Minor)	NH-P
9Cl-PF3ONS (F53B Major)	NH-P
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P
N-EtFOSAA	NH-P
N-MeFOSAA	NH-P
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T&B

Received By GR Date 7/23/11 Time 1730

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 60
By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F
Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client T Analysis T Sampler Name T
Project T ID's T Collection Dates/Times F

Are Sample labels filled out and legible? T
Are there Lab to Filters? F Who was notified? _____

Are there Rushes? F Who was notified? _____
Are there Short Holds? F Who was notified? _____

Is there enough Volume? T
Is there Headspace where applicable? NA MS/MSD? F

Proper Media/Containers Used? T Is splitting samples required? F
Were trip blanks received? T On COC? T

Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	<u>22</u>	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear
DI-		Other Glass		Other Plastic		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Unused Media

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear
DI-		Other Plastic		Other Glass		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Comments:

Did not receive containers for EPH

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client T&B
 Received By gr Date 9/23/11 Time 1730

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 60
 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times F

Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____

Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? T On COC? T
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	<u>22</u>	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear
DI-		Other Glass		Other Plastic		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Unused Media

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear
DI-		Other Plastic		Other Glass		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Comments:

~~Did not receive containers for EPH E&R 9/24/11~~
 Received EPH samples on 9/24/11 @ 1740

MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test, a Pace Analytical Laboratory Project #: 2111232
 Project Location: Town Hall Campus, Princeton, MA RTN: _____

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]
2111232-01 thru 2111232-12

Matrices: Water

CAM Protocol (check all that below)

8260 VOC CAM II A ()	7470/7471 Hg CAM III B ()	MassDEP VPH CAM IV A ()	8082 PCB CAM V A ()	9014 Total Cyanide/PAC CAM VI A ()	6860 Perchlorate CAM VIII B ()
8270 SVOC CAM II B ()	7010 Metals CAM III C ()	MassDEP VPH CAM IV C ()	8081 Pesticides CAM V B ()	7196 Hex Cr CAM VI B ()	MassDEP APH CAM IX A ()
6010 Metals CAM III A ()	6020 Metals CAM III D ()	MassDEP EPH CAM IV B (X)	8151 Herbicides CAM V C ()	8330 Explosives CAM VIII A ()	TO-15 VOC CAM IX B ()

Affirmative response to Questions A through F is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No ¹
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/> Yes <input type="checkbox"/> No ¹
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Questions A through E)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹

A response to questions G, H and I below is required for "Presumptive Certainty" status


G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
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Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

H	Were all QC performance standards specified in the CAM protocol(s) achieved?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No ¹
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No ¹

¹ All Negative responses must be addressed in an attached Environmental Laboratory case narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature:  Position: Director of Operations
 Printed Name: Daren J. Damboragian Date: 10/11/21