

Payson Long
New York State Department of Environmental Conservation (NYSDEC)
Division of Environmental Remediation
Bureau of Program Management
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Subject:
Water Supply Sampling Results
Former Columbia Mills
Minetto, Oswego County, New York
NYSDEC Site No. 738012
Contract No. D009804-13

ENVIRONMENT

Date:
May 12, 2022

Contact:
Andy Vitolins

Phone:
518.250.7300

Email:
Andy.vitolins@arcadis.com

Our ref:
30052248

Dear Mr. Long:

Arcadis of New York, Inc. (Arcadis) has prepared this letter report to summarize the water supply sampling activities conducted in October 2021 in the vicinity of the above-referenced site.

INTRODUCTION

Background

As part of a statewide effort to evaluate sites listed under the New York State Department of Environmental Conservation (NYSDEC) Inactive Hazardous Waste Sites (IHWS) Program (a.k.a., State Superfund sites) for the presence of emerging contaminants (ECs) (i.e., compounds not previously assessed), groundwater and leachate collection system samples were collected from the former Columbia Mills site located in Minetto, Oswego County, New York (Figure 1) in October and November 2017, and again in October 2021.

After evaluating the results of the EC sampling, the New York State Department of Health (NYSDOH) recommended offering water supply sampling to four private well owners within a 0.5-mile radius of the site. These four properties have not been previously sampled. On October 5, 2021, a water supply sample was collected from one residential well and analyzed for perfluorinated alkyl

substances (PFAS) and 1,4-Dioxane. Samples were not collected from the remaining three properties due to lack of well access or lack of response from the property owner.

Daily Documentation

Arcadis personnel completed a NYSDEC Daily Inspection Report (Attachment A) to summarize site conditions and work performed on the day of sampling. An Entry/Exit with COVID-19 Acknowledgement Form was completed to record that on-site personnel were compliant with NYSDEC COVID-19 requirements. In addition, an Arcadis COVID-19 Questionnaire was completed. These forms are included in Attachment B.

WATER SUPPLY SAMPLING

A water supply sample was collected by Arcadis on October 5, 2021 from a residential well located on Brookside Avenue (Figure 2) using a PFAS-free bailer in accordance with NYSDEC PFAS sampling protocols. A matrix spike (MS), matrix spike duplicate (MSD), and field duplicate sample (WS-X-DUP) were also collected at this location. Prior to collecting the water supply sample, pH, conductivity, turbidity, dissolved oxygen, temperature, and oxidation-reduction potential (ORP) were measured using a Horiba U-52 water quality meter and recorded on a water sampling log (Attachment C). The residential well was opened, and the pump removed by the homeowner prior to sampling.

The samples were submitted to Eurofins TestAmerica for analysis of PFAS via United States Environmental Protection Agency (USEPA) method ISO 25101 and 1,4-dioxane via USEPA 8270D Selected Ion Monitoring (SIM). The laboratory analytical report is provided in Attachment D.

Emerging Contaminant Analytical Results

As shown in Table 1, perfluorooctanoic acid (PFOA) was detected at concentrations that exceeded the NYSDEC Water Quality Guidance Value of 10 nanograms per liter (ng/L) and the USEPA Lifetime Health Advisory (LHA) of 70 ng/L in the sample collected from the Brookside Avenue residential well (and its duplicate sample) at concentrations of 85 ng/L and 72 ng/L, respectively. Perfluorooctanesulfonic acid (PFOS) was detected at concentrations that exceeded the NYSDEC Water Quality Guidance Value of 10 ng/L at the samples collected from the Brookside Avenue residential well and its duplicate sample at a concentration of 35 ng/L and 31 ng/L, respectively. The total detected PFOA and PFOS concentration in the samples also exceeded the USEPA LHA of 70 ng/L (concentrations of 120 ng/L and 103 ng/L, respectively).

Table 1 shows that 1,4-dioxane was not detected at the Brookside Avenue residential well at the indicated quantitation limit.

Data Validation

A Data Usability Summary Report (DUSR), included as Attachment E, was completed in accordance with NYSDEC DER 10/Technical Guidance for Site Investigation and Remediation (NYSDEC 2010). The analytical data were validated by Validata Chemical Services, Inc. (Validata) of Duluth, Georgia. Validata reviewed the usability of the analytical data, including determining if the data were accurate, precise, representative, complete, and comparable. Valid data are data for which all quality assurance

(QA)/quality control (QC) review criteria have been met and are acceptable. Data were characterized as usable where QA/QC parameters were not outside of, or marginally outside of acceptable limits, such that the data may be questionable but still usable within limitations. Data qualifiers resulting from the data quality review are included in Attachment E. In summary, all sample results are usable as reported with qualifications. The holding times and instrument tuning met requirements. The trip blanks showed no contamination. The specific details of the data validation can be found in the DUSR in Attachment E.

Please contact me at 518.250.7359 or andy.vitolins@arcadis.com if you have any questions or require additional information.

Sincerely,

Arcadis of New York, Inc.



Andy Vitolins, P.G.

Vice President

Copies:

Jeremy Wyckoff, P.G. – Arcadis

Jasmine Mullins, E.I.T. – Arcadis

File

Enclosures:

Figures

- 1 Site Location
- 2 Water Supply Sampling Location

Tables

- 1 Emerging Contaminant Analytical Results

Attachments

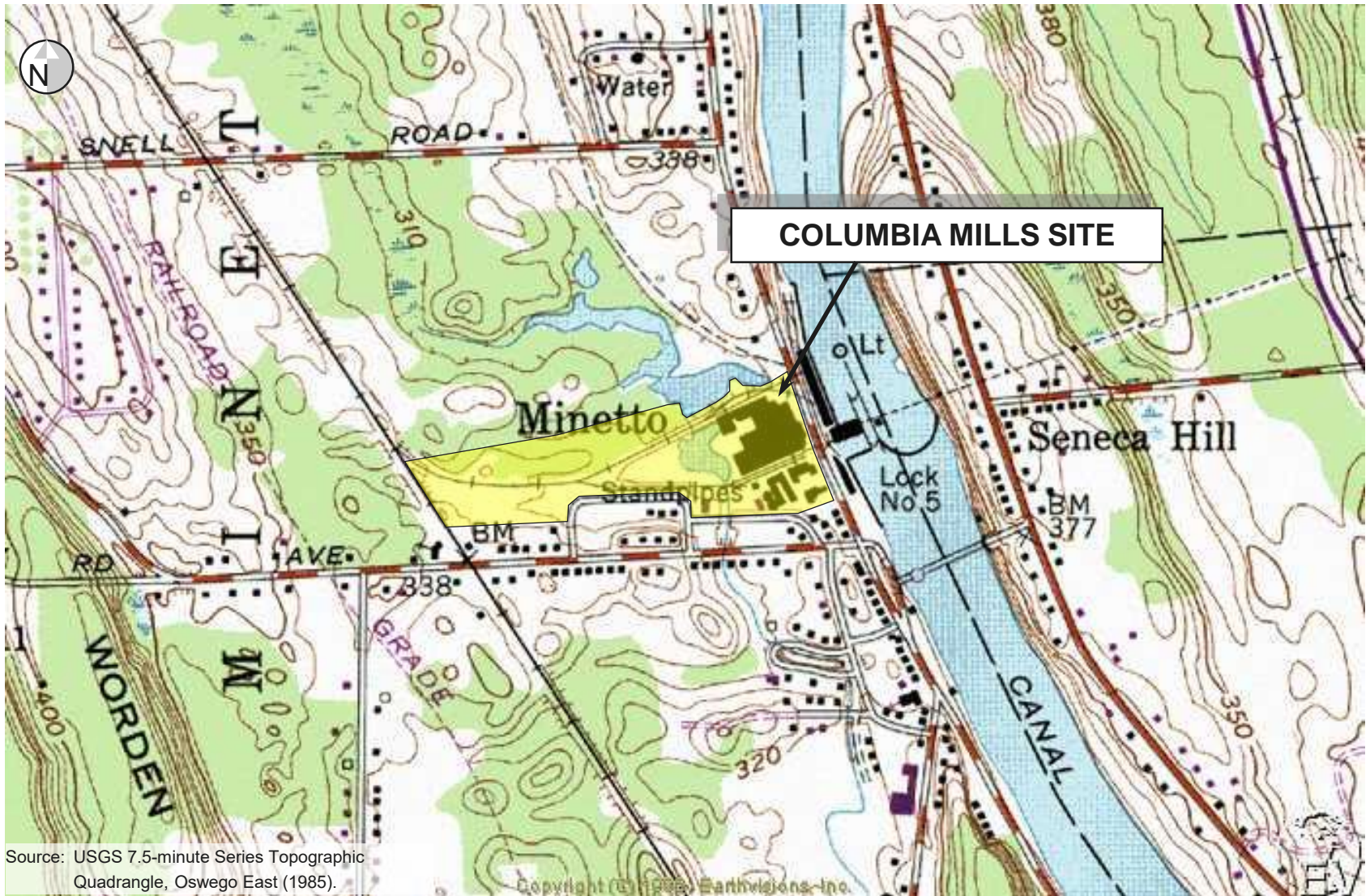
- A NYSDEC Daily Inspection Report
- B COVID-19 Entry-Exit Log and Screening Questionnaire
- C Water Sampling Log
- D Analytical Report
- E Data Usability Summary Report

FIGURES



Figure 1
Site Location

Columbia Mills Site
NYSDEC Site 7-38-012



Source: USGS 7.5-minute Series Topographic
Quadrangle, Oswego East (1985).

Copyright © 1985, Earthvisions, Inc.

0  2,000 ft



Legend

NYSDEC – New York State Department of Environmental Conservation

Ft – feet

 Site

 Water Supply Sampling Location

COLUMBIA MILLS
OSWEGO, NY
NYSDEC SITE 7-38-012

WATER SUPPLY SAMPLING LOCATION



FIGURE
2

TABLES



Table 1
Emerging Contaminant Analytical Results
Columbia Mills, Minetto, New York
NYSDEC Site No. 7-38-012

Location Date	NYSDEC Water Quality Guidance Value	USEPA Lifetime Health Advisory	WS-INF- BROOKSIDE AVE 10/5/2021	WS-X-DUP 10/5/2021
Perfluorinated Alkyl Substances (ng/L)				
Perfluoroheptanoic acid (PFHpA)	--	--	43	40
Perfluorooctanoic acid (PFOA)	10	70	85 F1 J	72
Perfluorononoic acid (PFNA)	--	--	12	11
Perfluorobutanesulfonic acid (PFBS)	--	--	17	15
Perfluorohexanesulfonic acid (PFHxS)	--	--	27	24
Perfluorooctanesulfonic acid (PFOS)	10	70	35	31
Total PFOA + PFOS	--	70	120	103
Total PFAS	--	--	219	193
1,4-Dioxane (µg/L)				
1,4-Dioxane	1.0	--	0.2 U	0.2 U

Notes:

Constituents detected above the New York State Department of Environmental Conservation (NYSDEC) Water Quality Guidance Value are highlighted in yellow.

Constituents detected above the United States Environmental Protection Agency (USEPA) Lifetime Health Advisory are highlighted in orange.

Definitions:

F1 - Matrix spike and or matrix spike duplicate recovery exceeds control limits.

J - The reported result was an estimated value with an unknown bias.

µg/L - microgram per liter.

ng/L - nanogram per liter.

U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

"--" - No regulatory criteria exists for respective analyte.

ATTACHMENT A
NYSDEC Daily Inspection Report



DAILY INSPECTION REPORT

Report No. 1 **Columbia Mills - NYSDEC Site No. 738012** Date: 10/05/2021

NYSDEC Division of Environmental Remediation		Department of Environmental Conservation				NYSDEC Contract No. D009804-13 Superintendent: NYSDEC PM: Payson Long Consultant PM: Andy Vitolins, P.G. Consultant Site Inspectors: Kimberly Stilson, Rachael Thomas	
Site Location: Hudson Falls, New York							
Weather Conditions							
General Description	Cloudy	AM	Cloudy	PM			
Temperature	62°F	AM	67°F	PM			
Wind	3 MPH E	AM	6 MPH E	PM			
Health & Safety							
If any box below is checked "Yes", provide explanation under "Health & Safety Comments".							
Were there any changes to the Health & Safety Plan?					*Yes	No <input checked="" type="checkbox"/>	NA
Were there any exceedances of the perimeter air monitoring reported on this date?					*Yes	No	NA <input checked="" type="checkbox"/>
Were there any nuisance issues reported/observed on this date?					*Yes	No <input checked="" type="checkbox"/>	NA
Health & Safety Comments							
None at this time.							
Summary of Work Performed		Arrived at site:	0730	Departed Site:	1700		
<ul style="list-style-type: none"> Completed groundwater sampling and well inspections at wells MW-2S, MW-2D, MW-3S, MW-3D. Conducted water supply sampling at Brookside Ave. Completed landfill inspection. 							
Equipment/Material Tracking							
If any box below is checked "Yes", provide explanation under "Material Tracking Comments".							
Were there any vehicles which did not display proper D.O.T numbers and placards?					*Yes	No <input checked="" type="checkbox"/>	NA
Were there any vehicles which were not tarped?					* Yes	No	NA <input checked="" type="checkbox"/>
Were there any vehicles which were not decontaminated prior to exiting the work site?					* Yes	No	NA <input checked="" type="checkbox"/>
Personnel and Equipment							
Individual		Company		Trade		Total Hours	
Kimberly Stilson		Arcadis		Geologist		9.5	
Rachael Thomas		Arcadis		Engineer		9.5	
Equipment Description		Contractor/Vendor			Quantity	Used	
Material Description		Imported/Delivered to Site	Exported off Site	Waste Profile (If Applicable)	Source or Disposal Facility (If Applicable)	Daily Loads	Daily Weight (tons)*
*On-Site scale for off-site shipment, delivery ticket for material received							
Equipment/Material Tracking Comments:							
None at this time.							
Visitors to Site							
Name		Representing			Entered Exclusion/CRZ Zone		
					Yes	No	
					Yes	No	
					Yes	No	
					Yes	No	

DAILY INSPECTION REPORT

Report No. 1 Columbia Mills - NYSDEC Site No. 738012 Date: 10/05/2021

Site Representatives	
Name	Representing
Project Schedule Comments	
None at this time.	
Issues Pending	
None at this time.	
Interaction with Public, Property Owners, Media, etc.	
None at this time.	

Include (insert) figures with markups showing location of work and job progress



Red outlined area indicates the location of work performed on October 5, 2021.

DAILY INSPECTION REPORT

Report No. 1

Columbia Mills - NYSDEC Site No. 738012

Date: 10/05/2021

Site Photographs (Descriptions Below)



View of monitoring wells MW-2S and MW-2D.



View of pond onsite.



View of monitoring wells MW-3S and MW-3D.



View of northern side of landfill.

Comments

None at this time.

Site Inspector(s): Kimberly Stilson, Rachael Thomas

Date: 10/5/2021

DAILY INSPECTION REPORT

Report No. 1 **Columbia Mills - NYSDEC Site No. 738012** Date: 10/05/2021

DAILY HEALTH CHECKLIST

Is social distancing being practiced?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Is the tail gate safety meeting held outdoors?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Are remote/call in job meetings being held in lieu of meeting in person where possible?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Were personal protective gloves, masks, and eye protection being used?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Are sanitizing wipes, wash stations or spray available?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Have any workers/visitors been excluded based on close contact with individuals diagnosed with COVID-19, have recently traveled to restricted areas or countries, or are symptomatic (fever, chills, cough/shortness of breath)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<u>Comments:</u> None at this time.		

REMEDIAL ACTIVITIES AT PROPERTIES

1. Have anyone at this location been tested and confirmed to have COVID-19?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
2. Is anyone at this location isolated or quarantined for COVID-19?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
3. Has anyone at this location had contact with anyone known to have COVID-19 in the past 14 days?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
4. Does anyone at this location have any symptoms of a respiratory infection (e.g., cough, sore throat, fever, or shortness of breath)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
5. Does the Department and its contractors have your permission to enter the property at this time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
If Yes to <u>any</u> of 1-4 above: <ul style="list-style-type: none"> If it is <u>not</u> critical that service/entry be carried out immediately and can be postponed until the risk of COVID-19 is lower, or can be accomplished remotely/without entry, postpone or conduct service without entry. If it <u>is</u> critical that service/entry be carried out immediately, advise occupants that as a precaution and for our own protection, project personnel will be donning appropriate PPE* (including respiratory protection) - and do so prior to entry. 	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<u>Comments:</u> None at this time.		

NUISANCE CHECKLIST

Were there any community complaints related to work on this date?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>
Were there any odors detected on this date?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>
Was noise outside specification and/or above background on this date?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>
Were vibration readings outside specification and/or above background on this date?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Any visible dust observed beyond the work perimeter on this date?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>
Any visible contrast (turbidity) beyond engineering controls observed on this date?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Were any property owners NOT provided advance notice for work performed on this property on this date?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Has Contractor failed to protect all foundations and structures adjacent to and adjoining the site which are affected by the excavations or other operations connected with performance of the Work?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>
If yes, has Contractor been notified?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
<u>Comments:</u> None at this time.			

ATTACHMENT B

COVID-19 Entry-Exit Log and Screening Questionnaire





Entry/Exit Log with COVID-19 Acknowledgement

Project Name: Columbia Mills

Project #: 30052248

New York State Department of Environmental Conservation's (DEC) objective is to provide a safe and healthy workplace. In response to COVID-19, DEC is prohibiting access to our work areas by those who pose an elevated risk of spreading COVID-19. By completing this site Entry/Exit log, you acknowledge your understanding of this policy and confirm that your health and travel history is NOT in one of the prohibited access groups listed below, and to the best of your knowledge, you do not pose an elevated risk of transmitting COVID-19 to others. Please leave the site immediately and follow recommendations from public health agencies and your healthcare provider if you fall into one of the prohibited access groups listed below:

- You are experiencing flu-like symptoms including but not limited to fever, chills, cough, sore throat, diarrhea, vomiting, runny/stuffy nose, muscle or body aches, headaches, fatigue.
You have traveled to CDC-restricted destinations in the last 2 weeks including China, South Korea, Iran, United Kingdom & Ireland, all European Union countries, Switzerland and regions within the U.S. for which public health agencies have prohibited travel.
You had direct contact with a person diagnosed with COVID-19 or suspected of having COVID-19 during the last 2 weeks.

Table with 6 columns: Name, Initials, Affiliation, Date, Time In, Time Out. Contains handwritten entries for Kim Stilson and Rachael Thomas on dates 10/04/21, 10/5/21, and 10/6/21.

K Stilson

Arcadis COVID-19 Health Screening Self-Assessment Questionnaire

For Arcadis Staff, Contractors, Scheduled/Anticipated Visitors and Guests

Arcadis remains deeply focused on the health and well-being of our employees, clients, vendors, guests and the communities where we live and work. To help protect against the spread of the novel coronavirus SARS-CoV-2, which causes COVID-19, before visiting our offices, we ask all employees and guests to self-evaluate whether they pose an undue risk to the health and safety of others. To that end, we ask our employees and guests to reflect on whether:

1. In the past 14 days, have you been diagnosed (either as a presumptive or laboratory-confirmed diagnosis) with COVID-19?
2. Have you been advised by a doctor, healthcare provider, or any public health authority to stay home or otherwise avoid contact with others?
3. Have you experienced fever, coughing, shortness of breath, or other symptoms associated with COVID-19 during the last 24 hours?
4. In the past 14 days, have you traveled to any countries with Level 3 or higher Travel Health Notice as designated by the Centers for Disease Control? For information regarding Travel Health Notices, please see: <https://www.cdc.gov/coronavirus/2019-ncov/travelers/after-travel-precautions.html>

If your answer to any of these questions is yes, we respectfully ask that you do not visit our offices or worksites as scheduled. If you appear in our offices or worksites, we will assume that your answer to each of these questions was no. Thank you in advance for your attention and assistance with this matter.

	<i>10/4</i>	<i>10/5</i>	<i>10/6</i>
<i>1</i>	<i>No</i>	<i>NO</i>	<i>NO</i>
<i>2</i>	<i>No</i>	<i>NO</i>	<i>NO</i>
<i>3</i>	<i>No</i>	<i>NO</i>	<i>NO</i>
<i>4</i>	<i>No</i>	<i>NO</i>	<i>NO</i>

Rachael Thomas

Arcadis COVID-19 Health Screening Self-Assessment Questionnaire

For Arcadis Staff, Contractors, Scheduled/Anticipated Visitors and Guests

Arcadis remains deeply focused on the health and well-being of our employees, clients, vendors, guests and the communities where we live and work. To help protect against the spread of the novel coronavirus SARS-CoV-2, which causes COVID-19, before visiting our offices, we ask all employees and guests to self-evaluate whether they pose an undue risk to the health and safety of others. To that end, we ask our employees and guests to reflect on whether:

1. In the past 14 days, have you been diagnosed (either as a presumptive or laboratory-confirmed diagnosis) with COVID-19?
2. Have you been advised by a doctor, healthcare provider, or any public health authority to stay home or otherwise avoid contact with others?
3. Have you experienced fever, coughing, shortness of breath, or other symptoms associated with COVID-19 during the last 24 hours?
4. In the past 14 days, have you traveled to any countries with Level 3 or higher Travel Health Notice as designated by the Centers for Disease Control? For information regarding Travel Health Notices, please see: <https://www.cdc.gov/coronavirus/2019-ncov/travelers/after-travel-precautions.html>

If your answer to any of these questions is yes, we respectfully ask that you do not visit our offices or worksites as scheduled. If you appear in our offices or worksites, we will assume that your answer to each of these questions was no. Thank you in advance for your attention and assistance with this matter.

	10/4	10/5	10/6
1.	No	No	No
2.	No	No	No
3.	No	No	No
4.	No	No	No

ATTACHMENT C

Water Sampling Log



Water Sampling Log

Project No. 30052248 Well ID Brookside Ave Date 10/5/2021

Project Name/Location Columbia Mills Weather Cloudy, 65°F

Measuring Pt. Description Top of concrete Screen Setting (ft-bmp) Unknown Casing Diameter (in.) 48.0 Well Material: PVC Stone X

Total Depth (ft-bmp) 20.0 Static Water Level (ft-bmp) 4.0 Water Column in Well (ft.) 16.0 Gallons in Well 1,504

MP Elevation -- Pump Intake (ft-bmp) Unknown Volumes Purged Not Recorded Gallons Purged 3.0

Sample Method Bailer Pump On/Off 1200/1230 Sample Time Label 0940 Start 0940 End 1030 Purge Method Centrifugal Submersible Disp. Bailer X Other

Replicate/Code No. See note section Sampled By KS/RT

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft) TOC	Gallons Purged	pH	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0935	0	--	3.5	NA	7.07	0.421	0.0	8.99	17.11	211	Clear	None

Constituents Sampled	Container	Number	Preservative
PFAS	250 mL Plastic	2	---
1,4-Dioxane	1 L Amber	2	---

Well Information

Well Location: In basement in back corner Well Locked at Arrival: No

Condition of Well: Good Well Locked at Departure: No

Well Completion: Flush Mount / Stickup Key Number To Well: No

NOTES: WS-INF-Brookside Ave MS and MSD collected at 0940.
 WS-X-DUP collected at 0930.

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

ATTACHMENT D
Analytical Report



ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-190561-1
Client Project/Site: Columbia Mills Co. #738012

For:
New York State D.E.C.
625 Broadway
Division of Environmental Remediation
Albany, New York 12233-7014

Attn: Brianna Scharf



Authorized for release by:
10/21/2021 2:41:28 PM
Wyatt Watson, Project Management Assistant I
Wyatt.Watson@Eurofinset.com

Designee for
Steve Hartmann, Project Manager I
(413)572-4000
Steve.Hartmann@Eurofinset.com

LINKS

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Have a Question?



Visit us at:

www.eurofinsus.com/Env

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

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

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



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Definitions/Glossary

Client: New York State D.E.C.
Project/Site: Columbia Mills Co. #738012

Job ID: 480-190561-1

Qualifiers

LCMS

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

Glossary

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

Case Narrative

Client: New York State D.E.C.
Project/Site: Columbia Mills Co. #738012

Job ID: 480-190561-1

Job ID: 480-190561-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative 480-190561-1

Comments

No additional comments.

Receipt

The samples were received on 10/7/2021 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.4° C.

GC/MS Semi VOA

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

LCMS

Method 25101:2009: The matrix spike and matrix spike duplicate (MS/MSD) recoveries for preparation batch 200-172764 and analytical batch 200-172844 were outside control limits for Perfluorooctanoic acid (PFOA). Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 25101:2009: Internal standard (ISTD) response for the following sample was outside acceptance criteria: (CCV 200-172844/1). All other injections of the standard were similarly high. It is believed that the standard concentrated, because all IDAs and target analytes in the standard were within acceptance limits. Therefore, the data have been reported.

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

Organic Prep

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



Client Sample Results

Client: New York State D.E.C.
Project/Site: Columbia Mills Co. #738012

Job ID: 480-190561-1

Client Sample ID: WS-INF-BROOKSIDE AVE

Lab Sample ID: 480-190561-1

Date Collected: 10/05/21 09:40

Matrix: Water

Date Received: 10/07/21 08:00

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20	0.10	ug/L		10/09/21 06:00	10/12/21 12:55	1
<i>Isotope Dilution</i>		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,4-Dioxane-d8		50		15 - 110			10/09/21 06:00	10/12/21 12:55	1

Method: 25101:2009 - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	43		1.6	0.19	ng/L		10/18/21 10:39	10/19/21 16:11	1
Perfluorooctanoic acid (PFOA)	85	F1	1.6	0.33	ng/L		10/18/21 10:39	10/19/21 16:11	1
Perfluorononanoic acid (PFNA)	12		1.6	0.22	ng/L		10/18/21 10:39	10/19/21 16:11	1
Perfluorobutanesulfonic acid (PFBS)	17		1.6	0.20	ng/L		10/18/21 10:39	10/19/21 16:11	1
Perfluorohexanesulfonic acid (PFHxS)	27		1.6	0.24	ng/L		10/18/21 10:39	10/19/21 16:11	1
Perfluorooctanesulfonic acid (PFOS)	35		1.6	0.23	ng/L		10/18/21 10:39	10/19/21 16:11	1
<i>Isotope Dilution</i>		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
18O2 PFHxS		107		25 - 150			10/18/21 10:39	10/19/21 16:11	1
13C4 PFHpA		98		25 - 150			10/18/21 10:39	10/19/21 16:11	1
13C4 PFOA		98		70 - 130			10/18/21 10:39	10/19/21 16:11	1
13C4 PFOS		102		70 - 130			10/18/21 10:39	10/19/21 16:11	1
13C5 PFNA		95		25 - 150			10/18/21 10:39	10/19/21 16:11	1
13C3 PFBS		104		25 - 150			10/18/21 10:39	10/19/21 16:11	1

Client Sample ID: WS-X-DUP

Lab Sample ID: 480-190561-2

Date Collected: 10/05/21 09:30

Matrix: Water

Date Received: 10/07/21 08:00

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20	0.10	ug/L		10/09/21 06:00	10/12/21 13:43	1
<i>Isotope Dilution</i>		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,4-Dioxane-d8		38		15 - 110			10/09/21 06:00	10/12/21 13:43	1

Method: 25101:2009 - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	40		1.6	0.19	ng/L		10/18/21 10:39	10/19/21 16:36	1
Perfluorooctanoic acid (PFOA)	72		1.6	0.35	ng/L		10/18/21 10:39	10/19/21 16:36	1
Perfluorononanoic acid (PFNA)	11		1.6	0.23	ng/L		10/18/21 10:39	10/19/21 16:36	1
Perfluorobutanesulfonic acid (PFBS)	15		1.6	0.20	ng/L		10/18/21 10:39	10/19/21 16:36	1
Perfluorohexanesulfonic acid (PFHxS)	24		1.6	0.25	ng/L		10/18/21 10:39	10/19/21 16:36	1
Perfluorooctanesulfonic acid (PFOS)	31		1.6	0.24	ng/L		10/18/21 10:39	10/19/21 16:36	1
<i>Isotope Dilution</i>		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
18O2 PFHxS		102		25 - 150			10/18/21 10:39	10/19/21 16:36	1
13C4 PFHpA		94		25 - 150			10/18/21 10:39	10/19/21 16:36	1
13C4 PFOA		99		70 - 130			10/18/21 10:39	10/19/21 16:36	1
13C4 PFOS		97		70 - 130			10/18/21 10:39	10/19/21 16:36	1
13C5 PFNA		92		25 - 150			10/18/21 10:39	10/19/21 16:36	1
13C3 PFBS		106		25 - 150			10/18/21 10:39	10/19/21 16:36	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: New York State D.E.C.
Project/Site: Columbia Mills Co. #738012

Job ID: 480-190561-1

Client Sample ID: TRIP BLANK-WS-20211005

Lab Sample ID: 480-190561-3

Date Collected: 10/05/21 10:30

Matrix: Water

Date Received: 10/07/21 08:00

Method: 25101:2009 - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.20	ng/L		10/18/21 10:39	10/19/21 16:44	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.35	ng/L		10/18/21 10:39	10/19/21 16:44	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		10/18/21 10:39	10/19/21 16:44	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.21	ng/L		10/18/21 10:39	10/19/21 16:44	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.7	0.25	ng/L		10/18/21 10:39	10/19/21 16:44	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.7	0.24	ng/L		10/18/21 10:39	10/19/21 16:44	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	105		25 - 150	10/18/21 10:39	10/19/21 16:44	1
13C4 PFHpA	100		25 - 150	10/18/21 10:39	10/19/21 16:44	1
13C4 PFOA	104		70 - 130	10/18/21 10:39	10/19/21 16:44	1
13C4 PFOS	106		70 - 130	10/18/21 10:39	10/19/21 16:44	1
13C5 PFNA	102		25 - 150	10/18/21 10:39	10/19/21 16:44	1
13C3 PFBS	109		25 - 150	10/18/21 10:39	10/19/21 16:44	1

Lab Chronicle

Client: New York State D.E.C.
Project/Site: Columbia Mills Co. #738012

Job ID: 480-190561-1

Client Sample ID: WS-INF-BROOKSIDE AVE

Lab Sample ID: 480-190561-1

Date Collected: 10/05/21 09:40

Matrix: Water

Date Received: 10/07/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			599699	10/09/21 06:00	SMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	599833	10/12/21 12:55	IMZ	TAL BUF
Total/NA	Prep	25101:2009 SPE			172764	10/18/21 10:39	CM	TAL BUR
Total/NA	Analysis	25101:2009		1	172844	10/19/21 16:11	ND	TAL BUR

Client Sample ID: WS-X-DUP

Lab Sample ID: 480-190561-2

Date Collected: 10/05/21 09:30

Matrix: Water

Date Received: 10/07/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			599699	10/09/21 06:00	SMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	599833	10/12/21 13:43	IMZ	TAL BUF
Total/NA	Prep	25101:2009 SPE			172764	10/18/21 10:39	CM	TAL BUR
Total/NA	Analysis	25101:2009		1	172844	10/19/21 16:36	ND	TAL BUR

Client Sample ID: TRIP BLANK-WS-20211005

Lab Sample ID: 480-190561-3

Date Collected: 10/05/21 10:30

Matrix: Water

Date Received: 10/07/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	25101:2009 SPE			172764	10/18/21 10:39	CM	TAL BUR
Total/NA	Analysis	25101:2009		1	172844	10/19/21 16:44	ND	TAL BUR

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL BUR = Eurofins TestAmerica, Burlington, 530 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Accreditation/Certification Summary

Client: New York State D.E.C.
Project/Site: Columbia Mills Co. #738012

Job ID: 480-190561-1

Laboratory: Eurofins TestAmerica, Buffalo

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

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	04-01-22

Laboratory: Eurofins TestAmerica, Burlington

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

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2336	02-25-23
Connecticut	State	PH-0751	09-30-21 *
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	05-17-22
Florida	NELAP	E87467	06-30-22
Minnesota	NELAP	050-999-436	12-31-21
New Hampshire	NELAP	2006	12-18-21
New Jersey	NELAP	VT972	06-30-22
New York	NELAP	10391	04-01-22
Pennsylvania	NELAP	68-00489	04-30-22
Rhode Island	State	LAO00298	12-30-21
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-17-00272	10-30-23
Vermont	State	VT4000	02-10-22
Virginia	NELAP	460209	12-14-21
Wisconsin	State	399133350	08-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: New York State D.E.C.
Project/Site: Columbia Mills Co. #738012

Job ID: 480-190561-1

Method	Method Description	Protocol	Laboratory
8270D SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	TAL BUF
25101:2009	Fluorinated Alkyl Substances	ISO	TAL BUR
25101:2009 SPE	Solid-Phase Extraction (SPE)	ISO	TAL BUR
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL BUF

Protocol References:

ISO = International Organization for Standardization

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

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL BUR = Eurofins TestAmerica, Burlington, 530 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Sample Summary

Client: New York State D.E.C.
Project/Site: Columbia Mills Co. #738012

Job ID: 480-190561-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-190561-1	WS-INF-BROOKSIDE AVE	Water	10/05/21 09:40	10/07/21 08:00
480-190561-2	WS-X-DUP	Water	10/05/21 09:30	10/07/21 08:00
480-190561-3	TRIP BLANK-WS-20211005	Water	10/05/21 10:30	10/07/21 08:00

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Login Sample Receipt Checklist

Client: New York State D.E.C.

Job Number: 480-190561-1

Login Number: 190561

List Number: 1

Creator: Stopa, Erik S

List Source: Eurofins TestAmerica, Buffalo

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	ARCADIS
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	



Login Sample Receipt Checklist

Client: New York State D.E.C.

Job Number: 480-190561-1

Login Number: 190561

List Number: 2

Creator: Whitehouse, Taylor J

List Source: Eurofins TestAmerica, Burlington

List Creation: 10/15/21 02:37 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	1720504
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.3°C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Chain of Custody Record

PFAS → BVT From Sy 4. RE



Client Information Client Contact: Jasmine Mullins Company: ARCADIS U.S., Inc. Address: 855 Route 146 Suite 210 City: Clifton Park State, Zip: NY, 12065 Phone: 646 248 4208 Email: Jasmine.Mullins@arcadis.com Project Name: Columbia Mills Co. #738012-WaterSupply Site:		Lab PM: Stone, Judy L E-Mail: Judy.Stone@Eurofins.com State of Origin: Syracuse Job #: #225		COC No: 480-163204-35861.1 Page: Page 1 of 1 Job #:	
Due Date Requested: TAT Requested (days): Standard Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No PO #: 646 248 4208 CallOut ID: 137999 W/O #:		Analysis Requested:		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid M - Hexane N - None O - AsNaO2 P - Na2CO3 Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
Barcode: 480-190561 Chain of Custody		8270D_SIM_MS_ID - 1,4-Dioxane 25101_2009 - PFAS - UCMR List		Perform M/MSD (Yes or No)	
Sample Identification		Field Filtered Sample (Yes or No)		Special Instructions/Note:	
WS-INF Backside Ave MS WS-INF Backside Ave MS WS-INF Backside Ave MSD WS-X-DUP Trip Blank WS-202005	Sample Date 10/15/21 0940 0940 0940 0930 1030	Sample Type (C=Comp, G=grab) G G G G G	Matrix (W=water, S=solid, O=oil, BT=issue, A=air) Water Water Water Water Water Water Water Water	Preservation Code: N N N N N N N N	Total No 4 4 4 4 2 4 4 4 4 2
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		Special Instructions/QC Requirements:	
Empty Kit Relinquished by:		Relinquished by: <i>[Signature]</i> Relinquished by: <i>[Signature]</i> Relinquished by: <i>[Signature]</i>		Date: 10/16/21, 1645 Date/Time: 10/16/21, 1900 Date/Time:	
Custody Seals Intact: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Custody Seal No.:		Received by: <i>[Signature]</i> Received by: <i>[Signature]</i> Received by: <i>[Signature]</i> Cooler Temperature(s) °C and Other Remarks:	



PFA's → BUT From Sye. RE

Client Information		Lab PM: Stone, Judy L		COC No: 480-163204-35861.1	
Client Contact: Jasmine Mullins		E-Mail: Judy.Stone@Eurofinset.com		Page: Page 1 of 1	
Company: ARCADIS U.S., Inc.		Phone: 646 248 4208		Job #: #225	
Address: 855 Route 146 Suite 210		PWSID:		Analysis Requested	
City: Clifton Park		TAT Requested (days): Standard		Preservation Codes:	
State, Zip: NY, 12065		Compliance Project: Δ Yes Δ No		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
Phone: 646 248 4208		PO #: CallOut ID: 137999		K - EDTA L - EDA Other:	
Email: Jasmine.Mullins@arcadis.com		WO #:		Total Number of Containers	
Project Name: Columbia Mills Co. #738012-WaterSupply		Project #: 48024078		Special Instructions/Note:	
Site:		SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, I=I-Tissue, A=Air)	Field Filtered Sample (Yes/No)	Preservation Code	870D_SIM_MS_ID - 1,4-Dioxane	25104_2009 - PFA's - UCMR List	870D_SIM_MS_ID - 1,4-Dioxane
WS-INF Brookside Ave	10/5/21	0940	G	Water	N		Y	2	2
WS-INF Brookside Ave MS		0940	G	Water	N		Y	2	2
WS-INF Brookside Ave MSD		0940	G	Water	N		Y	2	2
WS-X-DUP		0930	G	Water	N		N	2	2
Trip Blank-WS-2021005		1030	G	Water	N		N	2	2
				Water					
				Water					
				Water					
				Water					
				Water					
				Water					
				Water					
				Water					

MS/MSD

480-190561 Chain of Custody

Special Instructions/Note: MS/MSD

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return To Client Disposal By Lab Archive For Months

Special Instructions/QC Requirements:

Empty Kit Relinquished by: [Signature] Date: [Blank]

Relinquished by: [Signature] Date/Time: 10/16/21, 1645 Company: Arcadis

Relinquished by: [Signature] Date/Time: 10/16/21, 1900 Company: R.E. Englich

Relinquished by: [Signature] Date/Time: 10/17/21, 1100 Company: EPA/SG

Custody Seals Intact: Δ Yes Δ No Custody Seal Nc.: [Blank]

Cooler Temperature(s) °C and Other Remarks:



ORIGIN ID:9YRA (315) 431-0171
SYR SERVICE CENTER
EUROFINS TESTAMERICA
118 BOSS RD

SHIP DATE: 06OCT21
ACTWGT: 12.00 LB MAN
CAD: 0883373/CAFE3506

SYRACUSE, NY 13211
UNITED STATES US

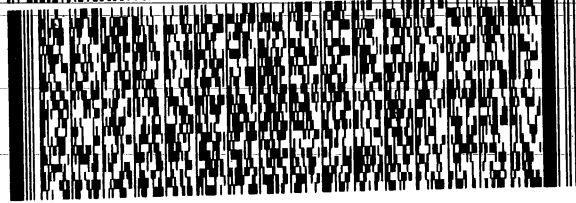
BILL RECIPIENT

TO **SAMPLE RECEIVING
TESTAMERICA BURLINGTON
530 COMMUNITY DRIVE SUITE 11**

SOUTH BURLINGTON VT 05403

(802) 660-1990

REF: ARCADIS COLUMBIA SUPPLY 1COOLER



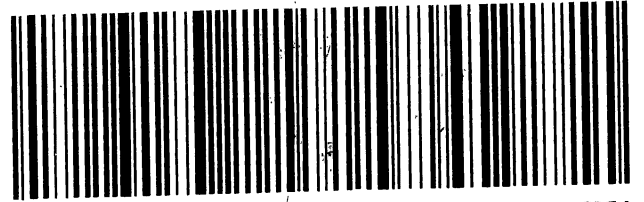
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- 11

TRK# 9735 8147 2410
0201

**THU - 07 OCT 10:30A
PRIORITY OVERNIGHT**

NL BTVA

**05403
VT-US BTV**



ATTACHMENT E
Data Usability Summary Report



VALIDATA

Chemical Services, Inc.

2159 Wynnton Pointe, Duluth, GA 30097

(770) 232-0130

(770) 232-5082 (Fax)

www.datavalidator.com

DATA USABILITY SUMMARY REPORT

COMPANY: Arcadis of New York
PROJECT NAME: Columbia Mills Co. #738012
CONTRACTED LAB: Eurofins Test America, Buffalo, Burlington
QA/QC LEVEL: DUSR
ANALYTICAL METHOD(S): SW 846 Method 8270D SIM, EPA Method 537 Modified
VALIDATION GUIDELINES: USEPA Region II data validation SOP (SVOC HW-22 Rev.5), USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, **2008**; NYDEC Guidelines for Sampling and Analysis of PFAS, January 2020, Professional Judgment
SAMPLE MATRIX: Water
TYPES OF ANALYSES: 1,4-dioxane, Per and Polyfluoroalkyl Substances (PFAS)
DATA REVIEWER(S): Amy L. Hogan, Thomas B. Granat
SDG NUMBER: 480-190561-1
SAMPLING DATE(S): October 5, 2021

SAMPLES:

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>1,4-dioxane</u>	<u>PFAS</u>
WS-INF-BROOKSIDE AVE	480-190561-1	X	X
WS-INF-BROOKSIDE AVE MS	480-190561-1MS	X	X
WS-INF-BROOKSIDE AVE MSD	480-190561-1MSD	X	X
WS-X-DUP	480-190561-2	X	X
TRIP BLANK-WS-20211005	480-190561-3		X

Suffix Codes: DL= DILUTION, MS = MATRIX SPIKE,
MSD = MATRIX SPIKE DUPLICATE, RE =
REANALYSIS

Qualifier	Definition
U	The analyte was not detected and was reported as less than the LOD or as defined by the customer. The LOD has been adjusted for any dilution or concentration of the sample.
J	The reported result was an estimated value with an unknown bias.
J+	The result was an estimated quantity, but the result may be biased high.
J-	The result was an estimated quantity, but the result may be biased low.
N	The analysis indicates the presence of an analyte for which there was presumptive evidence to make a "tentative identification."
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value was the estimated concentration in the sample.
UJ	The analyte was not detected and was reported as less than the LOD or as defined by the customer. However, the associated numerical value is approximate.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

DATA USABILITY SUMMARY REPORT

Eurofins Test America, Buffalo – 480-190547-1

1,4-DIOXANE

SUMMARY

I.) General:

The analyses for 1,4-dioxane were performed per SW846 Method 8270D SIM.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

II.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

IV.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

V.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

VI.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

Equipment Blanks:

There was no associated field equipment blank submitted for this SDG. No data qualification was necessary.

Field Blanks:

There was no associated field blank submitted for this SDG. No data qualification was necessary.

VII.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No data qualification was necessary.

VIII.) Laboratory Control Samples (LCS):

One LCS was analyzed by the laboratory for this SDG. All criteria were met. No data qualification was necessary.

IX.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed using sample WS-INF-BROOKSIDE AVE. All criteria were met. No data qualification was necessary.

X.) Field Duplicates:

One set of field duplicate samples (WS-INF-BROOKSIDE AVE / WS-X-DUP) was identified as part of this SDG. There was no calculable Relative Percent Difference (RPD), so no data qualification was necessary.

XI.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

XII.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XIII.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRQL criteria were met. No data qualification was necessary.

Eurofins TestAmerica, South Burlington, VT – 480-190561-1

PERFLUROALKYL SUBSTANCES (PFAS)

SUMMARY

I.) General:

The analyses for Perfluoroalkyl Substances were performed by Liquid Chromatography Tandem Mass Spectrometry (LC/MS/MS) per EPA Method 537 Modified.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no major problems for this fraction of the SDG.

MINOR ISSUES

I.) Laboratory Data Package:

The required documentation was present and complete. The laboratory presented a complete and accurate case narrative in the data package. The data package contains results for all samples and method types listed on the COC.

II.) Sample Receipt, Preservation, and Holding Times:

The samples were received intact with proper COC documentation and signatures. The samples were received within the method temperature requirements. The samples were extracted and analyzed within the method hold times.

III.) Initial Calibration (ICAL) and Initial Calibration Verification (ICV):

All Initial Calibration criteria were met. No data qualification was necessary.

IV.) Continuing Calibration (CCV):

All Continuing Calibration Verification criteria were met. No data qualification was necessary.

V.) Blanks:

Method Blank (MB):

There were no detections in MB 200-172764/1-A. No data qualification was necessary.

Field Blank (FB):

There were no Field Blanks identified in the SDG. No data qualification was necessary.

Equipment Blank (EB):

There were no Equipment Blanks identified in the SDG. No data qualification was necessary.

Trip Blank (TB):

There were no detections in TRIP BLANK-WS-20211005. No data qualification was necessary.

VI.) Matrix Spike / Matrix Spike Duplicate (MS/MSD):

MS / MSD analyses were performed using sample WS-INF-BROOKSIDE AVE. The PFOA MS recovery (53%) and MSD recovery (68%) were below the QC lower limit of 70%. The PFOA result was estimated (J) in the parent sample WS-INF-BROOKSIDE AVE.

VII.) Laboratory Control Sample (LCS):

All LCS criteria were met. No data qualification was necessary.

VIII.) Field Duplicates:

One FD sample was identified for this fraction of the SDG. Below are the calculated RPDs (Relative Percent Differences) for the detected analyte results used to evaluate the field sampling and laboratory precision for the sample matrix. Only results > 2x RL were qualified if RPDs were not within the QC limit.

<u>Parent Sample</u>	<u>Duplicate Sample</u>	<u>Analyte</u>	<u>RPD</u>
WS-INF-BROOKSIDE AVE	WS-X-DUP	PFHpA	7.2
		PFOA	16.6
		PFNA	8.7
		PFBS	12.5
		PFHxS	11.8
		PFOS	12.1

The RPDs were within the $\leq 30\%$ QC limit for water. No data qualification was necessary.

IX.) Internal Standards Performance (ISTD):

All ISTD criteria were met. No data qualification was necessary.

X.) Ion Transitions:

The ratio of quantifier ion response to qualifier ion response were within the laboratory criteria. No data qualification was necessary.

XI.) Reporting limits (RLs):

All SDG sample Reporting Limits were acceptable. No data qualification was necessary.

XII.) Instrument Performance criteria:

All Instrument Performance criteria were met. No data qualification was necessary.

XIII.) Sample and QC Calculation Verification:

All Sample and QC Calculation Verification criteria were met. No discrepancies were noted.

Attachment A

Sample Result Forms (FORM Is) Corrected for Validation Qualifiers

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-190561-1
 SDG No.: _____
 Client Sample ID: WS-INF- BROOKSIDE AVE Lab Sample ID: 480-190561-1
 Matrix: Water Lab File ID: U33164356.D
 Analysis Method: 8270D SIM ID Date Collected: 10/05/2021 09:40
 Extract. Method: 3510C Date Extracted: 10/09/2021 06:00
 Sample wt/vol: 250 (mL) Date Analyzed: 10/12/2021 12:55
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 599833 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	50		15-110

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-190561-1
 SDG No.: _____
 Client Sample ID: WS-X-DUP Lab Sample ID: 480-190561-2
 Matrix: Water Lab File ID: U33164358.D
 Analysis Method: 8270D SIM ID Date Collected: 10/05/2021 09:30
 Extract. Method: 3510C Date Extracted: 10/09/2021 06:00
 Sample wt/vol: 250 (mL) Date Analyzed: 10/12/2021 13:43
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 599833 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	38		15-110

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Burlington Job No.: 480-190561-1
 SDG No.: _____
 Client Sample ID: WS-INF- BROOKSIDE AVE Lab Sample ID: 480-190561-1
 Matrix: Water Lab File ID: PA211019B04.d
 Analysis Method: 25101:2009 Date Collected: 10/05/2021 09:40
 Extraction Method: 25101:2009 SPE Date Extracted: 10/18/2021 10:39
 Sample wt/vol: 316.8(mL) Date Analyzed: 10/19/2021 16:11
 Con. Extract Vol.: 10(mL) Dilution Factor: 1
 Injection Volume: 20(uL) GC Column: C-18 ID: 4.6(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 172844 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-85-9	Perfluoroheptanoic acid (PFHpA)	43		1.6	0.19
335-67-1	Perfluorooctanoic acid (PFOA)	85	F1 J	1.6	0.33
375-95-1	Perfluorononanoic acid (PFNA)	12		1.6	0.22
375-73-5	Perfluorobutanesulfonic acid (PFBS)	17		1.6	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	27		1.6	0.24
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	35		1.6	0.23

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00994	18O2 PFHxS	107		25-150
STL01892	13C4 PFHpA	98		25-150
STL00990	13C4 PFOA	98		70-130
STL00991	13C4 PFOS	102		70-130
STL00995	13C5 PFNA	95		25-150
STL02337	13C3 PFBS	104		25-150

TBG 1/4/2022

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Burlington Job No.: 480-190561-1
 SDG No.: _____
 Client Sample ID: WS-X-DUP Lab Sample ID: 480-190561-2
 Matrix: Water Lab File ID: PA211019B07.d
 Analysis Method: 25101:2009 Date Collected: 10/05/2021 09:30
 Extraction Method: 25101:2009 SPE Date Extracted: 10/18/2021 10:39
 Sample wt/vol: 307(mL) Date Analyzed: 10/19/2021 16:36
 Con. Extract Vol.: 10(mL) Dilution Factor: 1
 Injection Volume: 20(uL) GC Column: C-18 ID: 4.6(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 172844 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-85-9	Perfluoroheptanoic acid (PFHpA)	40		1.6	0.19
335-67-1	Perfluorooctanoic acid (PFOA)	72		1.6	0.35
375-95-1	Perfluorononanoic acid (PFNA)	11		1.6	0.23
375-73-5	Perfluorobutanesulfonic acid (PFBS)	15		1.6	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	24		1.6	0.25
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	31		1.6	0.24

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00994	18O2 PFHxS	102		25-150
STL01892	13C4 PFHpA	94		25-150
STL00990	13C4 PFOA	99		70-130
STL00991	13C4 PFOS	97		70-130
STL00995	13C5 PFNA	92		25-150
STL02337	13C3 PFBS	106		25-150

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Burlington Job No.: 480-190561-1
 SDG No.: _____
 Client Sample ID: TRIP BLANK-WS-20211005 Lab Sample ID: 480-190561-3
 Matrix: Water Lab File ID: PA211019B08.d
 Analysis Method: 25101:2009 Date Collected: 10/05/2021 10:30
 Extraction Method: 25101:2009 SPE Date Extracted: 10/18/2021 10:39
 Sample wt/vol: 300(mL) Date Analyzed: 10/19/2021 16:44
 Con. Extract Vol.: 10(mL) Dilution Factor: 1
 Injection Volume: 20(uL) GC Column: C-18 ID: 4.6(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 172844 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.20
335-67-1	Perfluorooctanoic acid (PFOA)	ND		1.7	0.35
375-95-1	Perfluorononanoic acid (PFNA)	ND		1.7	0.23
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.21
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	ND		1.7	0.25
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		1.7	0.24

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00994	18O2 PFHxS	105		25-150
STL01892	13C4 PFHpA	100		25-150
STL00990	13C4 PFOA	104		70-130
STL00991	13C4 PFOS	106		70-130
STL00995	13C5 PFNA	102		25-150
STL02337	13C3 PFBS	109		25-150

Attachment B

Support Documentation for Validation Qualifiers

FORM III
PFAS MATRIX SPIKE RECOVERY

Lab Name: Eurofins TestAmerica, Burlington Job No.: 480-190561-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: PA211019B05.d
 Lab ID: 480-190561-1 MS Client ID: WS-INF- BROOKSIDE AVE MS

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
Perfluoroheptanoic acid (PFHpA)	31.5	43	68.1	79	50-150	
Perfluorooctanoic acid (PFOA)	31.5	85	102	53	70-130	F1
Perfluorononanoic acid (PFNA)	31.5	12	43.3	99	50-150	
Perfluorobutanesulfonic acid (PFBS)	27.9	17	42.6	92	50-150	
Perfluorohexanesulfonic acid (PFHxS)	28.7	27	51.4	85	50-150	
Perfluorooctanesulfonic acid (PFOS)	29.3	35	59.0	80	70-130	
18O2 PFHxS	37.3	40	39.6	106	25-150	
13C4 PFHpA	39.4	39	40.5	103	25-150	
13C4 PFOA	39.4	39	40.9	104	70-130	
13C4 PFOS	37.7	38	39.6	105	70-130	
13C5 PFNA	39.4	38	38.4	97	25-150	
13C3 PFBS	36.7	38	41.1	112	25-150	

Column to be used to flag recovery and RPD values

FORM III
PFAS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Burlington Job No.: 480-190561-1

SDG No.: _____

Matrix: Water Level: Low Lab File ID: PA211019B06.d

Lab ID: 480-190561-1 MSD Client ID: WS-INF- BROOKSIDE AVE MSD

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluoroheptanoic acid (PFHpA)	31.3	68.3	81	0	20	50-150	
Perfluorooctanoic acid (PFOA)	31.3	107	68	4	20	70-130	F1
Perfluorononanoic acid (PFNA)	31.3	42.2	96	3	20	50-150	
Perfluorobutanesulfonic acid (PFBS)	27.7	44.5	99	4	20	50-150	
Perfluorohexanesulfonic acid (PFHxS)	28.5	51.9	87	1	20	50-150	
Perfluorooctanesulfonic acid (PFOS)	29.1	59.7	83	1	20	70-130	
18O2 PFHxS	37.0	39.9	108			25-150	
13C4 PFHpA	39.2	39.7	101			25-150	
13C4 PFOA	39.2	39.7	101			70-130	
13C4 PFOS	37.4	39.1	104			70-130	
13C5 PFNA	39.2	39.0	100			25-150	
13C3 PFBS	36.4	38.8	106			25-150	

Column to be used to flag recovery and RPD values

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A decorative graphic consisting of three thin orange lines. One line is horizontal, extending across the width of the page. Two other lines are diagonal, starting from the bottom left and extending towards the top right, crossing the horizontal line.