NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 8
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May 6, 2019

Harry Donahue
Superintendent of Public Works
Village of Brockport
38 East Avenue
Brockport, NY 14420

Lewis Streeter
Senior Project Manager
General Electric Company
1 River Road- Bldg 5-7W
Schenectady, NY 12345

RE: Work Plan For additional sampling and testing for Emerging Contaminants PFOAS and 1,4-Dioxane; January 18, 2019
Brockport Landfill
Site ID 828038

Dear Mr. Donahue and Mr. Streeter:

The New York State Department of Environmental Conservation (NYSDEC) has completed its review of the document entitled "*Work Plan For additional sampling and testing for Emerging Contaminants PFOAS and 1,4-Dioxane"* (the Work Plan) dated January 18, 2019, and prepared by Larsen Engineers for the Brockport Landfill site. NYSDEC has determined that the Work Plan, with modifications, substantially addresses the requirements of the Order on Consent. In accordance with 6 NYCRR Part 375-1.6, a complete copy of the approved NYSDEC-modified Work Plan is attached to the electronic copy of this letter.

NYSDEC understands that the groundwater sampling and testing for emerging contaminants will be combined with the routine groundwater monitoring event and will be completed within 8 weeks of the date of this letter (approximately June 30, 2019). NYSDEC also understands that the samples will be collected by Enalytic Laboratories and that Larsen Engineers will be on-site to oversee the entire sampling event.

Please notify me at least 7 days in advance of the scheduled sampling date.

With the understanding that NYSDEC's modified Work Plan is agreed to, the attached Work Plan is hereby approved. If the Respondents choose not to accept the approved modified Work Plan, you are required to notify this office within 20 days after receipt of

this letter. In this event, I suggest a meeting be scheduled to discuss your concerns prior to the end of this 20-day period.

Thank you for your cooperation in this matter and please contact me at (585) 226-5357 if you have any questions regarding the approved Work Plan.

Sincerely,

Project Manager
Region 8
Division of Environmental Remediation

e-Enclosure

ec: w/e-Enclosure
S. Ram Shrivastava, P.E., Larsen
P. Fricano, Enalytic Laboratories
B. Schilling, RHWRE
M. Cruden, BD
J. Kenney, NYSDOH
J. Deming, NYSDOH

Work Plan

For additional sampling and testing for

Emerging Contaminants PFAS and 1,4-Dioxane

at

BROCKPORT LANDFILL

SITE NO. 828038

(Spring 2019 Sampling Event)

January 18,2019

For the

Village of Brockport

49 State Street

Brockport, New York 14420

Modified by NYSDEC May 6, 2019

LARSEN ENGINEERS
700 WEST METRO PARK, ROCHESTER, NY 14623-2678
Phone: 585-272-7310 Fax: 585-272-0159

1. INTRODUCTION

NYS DEC is now requiring additional sampling and testing for Emerging Contaminant as part of future landfill monitoring work (for one cycle) to determine the impact on ground water. This work plan presents the rational to select the sampling locations and testing plan to comply with the new requirements. Brockport landfill monitoring was completed in 2016 and a monitoring report submitted in 2017. In August of 2018, DEC notified the Village that landfill monitoring report was not submitted. Unfortunately, no sampling collection was conducted in 2018 and therefore it is now planned for this Spring. This work plan proposes that additional sampling for TAL PFAS and 1,4-Dioxane contaminants to be combined with the routine sampling program, which has been authorized by the Village Board.

2. LOCATIONS

Attachment 1is monitoring well location map PL3. We propose to take samples at One-upstream well GW-1S, and three downstream wells GW-3S, GW-6R and GW-9R Closest to the Erie Canal. Considering the ground water elevations this testing will provide indication about the any presence of PFAS and 1,4-Dioxane contaminants in the ground water resulting from the closed landfill. The ground water level data collected in Spring of 2019 will supplement previously collected data but not substitute for the uncollected information in past years. The Village regrets the lack of continuity and assures DEC for avoiding such event in future.

3. SAMPLING

The selected Lab is certified by the regulatory agencies and has conducted similar work at other landfills in the past. It is understood that these contaminants require special procedures and sampling equipment due to very low threshold of concentrations. .Sample collection procedures are provided in Attachment 2.

As specified in Attachment 2, quality assurance/quality control samples for the emerging contaminants include:

- One equipment blank;
- One field duplicate; and,
- One matrix spike (MS) and one matrix spike duplicate (MSD).

Larsen Engineers will be on-site for the entire sampling event and will verify that field activities were performed in full accordance with approved work plans.

4. ANALYSIS

Enalytic Laboratories will provide the test results for both routine monitoring and additional testing for emerging contaminants to Larsen Engineers. These results (with ASP-Category B deliverables) will be reviewed by Dr. Applin as part of data validation services PFAS will be analyzed using Modified EPA Method 537 by a laboratory that is ELAP certified for Method 537. Reporting limits for PFOA and PFOS will not exceed 2 ng/L. The laboratories reporting

limits for all TAL PFAS compounds and other laboratory information is provided in a separate confidential document.

1,4-Dioxane will be analyzed by an ELAP certified laboratory using method 8270 in SIM mode. The method detection limit (MDL) for 1,4-dioxane will be no higher than 0.28 µg/l.

5. Monitoring Report for 2019

The Village plans to get both routine monitoring and emerging contaminants sampling and testing done at the same field visit in spring 2019. Subsequent to completion of sampling, testing, data validation (Data Usability Summary Report), and submittal to EQuIS, our emerging contaminant letter report will be compiled for submission to NYSDEC. The report will be certified in accordance with DER-10 section 1.5(b)2. The emerging contaminant data and documentation will also be included in the next Periodic Review Report for the site.

6. Schedule

The groundwater samples will be collected within ***[8}*** weeks of work plan approval. NYSDEC will be notified at least 7 days in advance of the sampling date. Preliminary results will be submitted to NYSDEC upon receipt. Final validated results will be submitted for inclusion into EQuIS within ***[12]*** weeks of work plan approval and a draft letter report will be submitted to NYSDEC within ***[16]*** weeks of work plan approval.

Respectfully Submitted By:

S. Ram Shrivastava, P.E., LEED-AP

President CEO

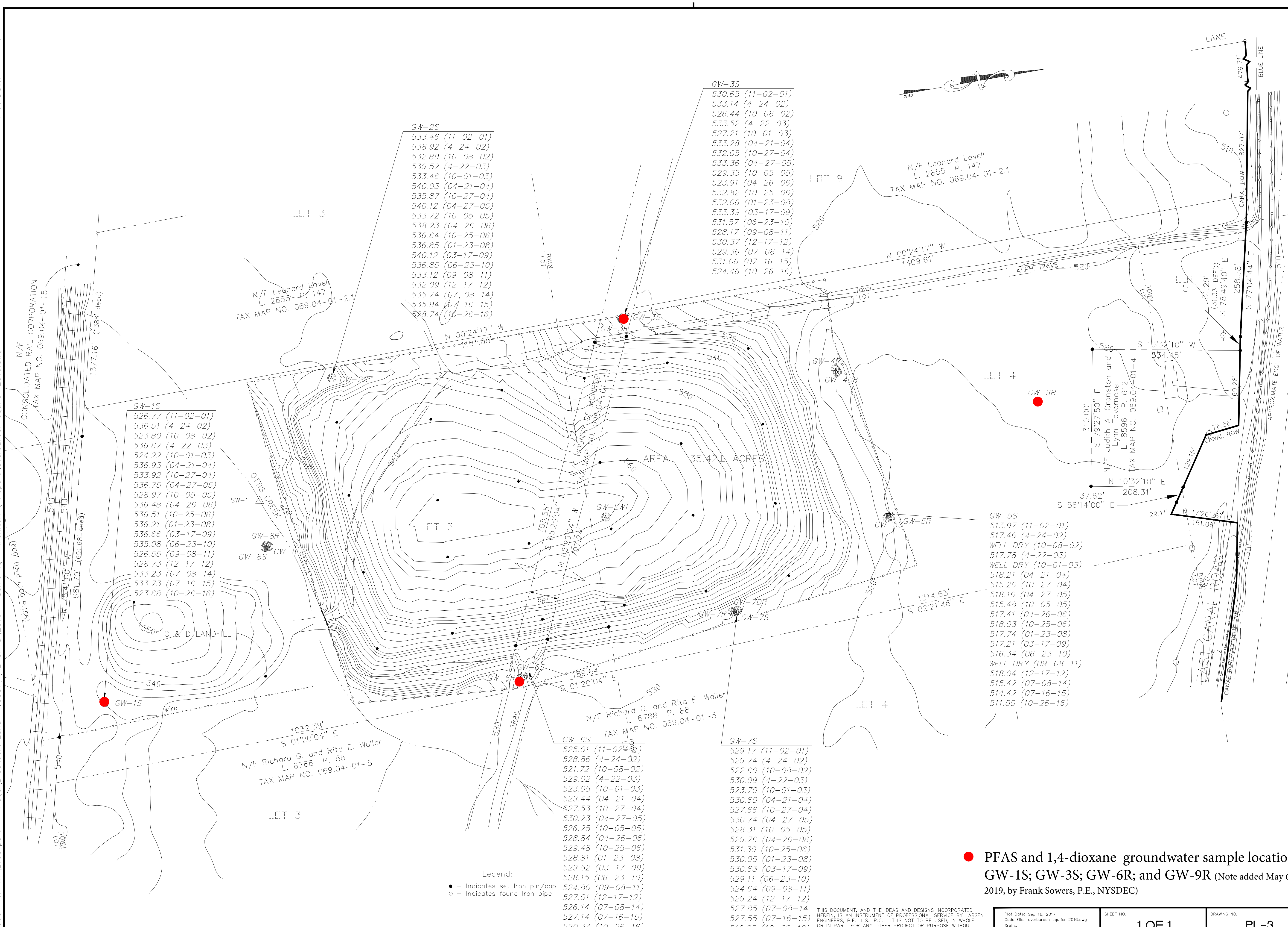
Modified by NYSDEC May 6, 2019

List of Attachments:

1. Emerging Contaminant Groundwater Monitoring Locations
2. Enalytic Sampling Protocal- PFAS

ATTACHMENT 1

Emerging Contaminant Groundwater Monitoring Locations



● PFAS and 1,4-dioxane groundwater sample locations: GW-1S; GW-3S; GW-6R; and GW-9R (Note added May 6, 2019, by Frank Sowers, P.E., NYSDEC)

Cadd File: H:\Brockport – Village\Brockport Landfill (5557)\REPORTS\2016 – Sampling – Monitoring Report\overburden aquifer 2016.dwg   Plot Date: Sep 18, 2017

NO.	REVISIONS	BY	DATE
1–8	ADDED 10/08/02 THRU 04/26/06	TCR	11/02 04/06
9	ADDED 10/25/06	TCR	2/07
10	ADDED 01/23/08	SC	4/08
11	ADDED 03/17/09	J.A.P.	6/09
12	ADDED 06/23/10	K.M.S.	8/10
13	ADDED 09/08/11	D.M.H.	11/21/11
14	ADDED 12/17/12	K.M.S.	4/4/13
15	ADDED 10/26/16	C.G.S.	9/18/17

STATE OF NEW YORK · TIMOTHY C. ROCK · LICENSE No. 54572 · Licensed Professional Engineer

PROJECT MANAGER

FIRM PRINCIPAL

PROJECT ENGINEER: T.C.R.
DRAWN BY: R.S.B.
CHECKED BY: T.C.R.
SCALE: 1" = 200'
DATE: JAN. 2002

LARSEN ENGINEERS
700 WEST METRO PARK, ROCHESTER, NEW YORK 14623-2678
(716)272-7310 FAX (716)272-0159

PROJECT: BROCKPORT LANDFILL
VILLAGE OF BROCKPORT, COUNTY OF MONROE, STATE OF NEW YORK

TITLE: OVERBURDEN AQUIFER ISOPOTENTIAL MAP

Plot Date: Sep 18, 2017
Cadd File: overburden aquifer 2016.dwg
Xref's:
Zip Disk:

SHEET NO. 1 OF 1

DRAWING NO. PL-3

PROJECT NO.: 07-3-5557

ATTACHMENT 2

Enalytic Sampling Protocal- PFAS

Collection of Groundwater Samples for Perfluorooctanoic Acid (PFOA) and Perfluorinated Compounds (PFCs) from Monitoring Wells Sample Protocol

Samples collected using this protocol are intended to be analyzed for perfluorooctanoic acid (PFOA) and other perfluorinated compounds by Modified (Low Level) Test Method 537.

The procedure used must be consistent with the NYSDEC March 1991 Sampling Guidelines and Protocols http://www.dec.ny.gov/docs/remediation_hudson_pdf/sgpsect5.pdf with the following materials limitations.

At this time acceptable materials for sampling include: stainless steel, high density polyethylene (HDPE), PVC, silicone, acetate and polypropylene. Equipment blanks should be generated at least daily. Additional materials may be acceptable if pre-approved by NYSDEC. Requests to use alternate equipment should include clean equipment blanks. **NOTE: Grunfos pumps and bladder pumps are known to contain PFC materials (e.g. Teflon™ washers for Grunfos pumps and LDPE bladders for bladder pumps).** All sampling equipment components and sample containers should not come in contact with aluminum foil, low density polyethylene (LDPE), glass or polytetrafluoroethylene (PTFE, Teflon™) materials including sample bottle cap liners with a PTFE layer. Standard two step decontamination using detergent and clean water rinse will be performed for equipment that does come in contact with PFC materials. Clothing that contains PTFE material (including GORE-TEX®) or that have been waterproofed with PFC materials must be avoided. Many food and drink packaging materials and “plumbers thread seal tape” contain PFCs.

All clothing worn by sampling personnel must have been laundered multiple times. The sampler must wear nitrile gloves while filling and sealing the sample bottles.

Pre-cleaned sample bottles with closures, coolers, ice, sample labels and a chain of custody form will be provided by the laboratory.

1. Fill two pre-cleaned 500 mL HDPE or polypropylene bottle with the sample.
2. Cap the bottles with an acceptable cap and liner closure system.
3. Label the sample bottles.
4. Fill out the chain of custody.
5. Place in a cooler maintained at 4 ± 2º Celsius.

Collect one equipment blank for every sample batch, not to exceed 20 samples.

Collect one field duplicate for every sample batch, not to exceed 20 samples.

Collect one matrix spike / matrix spike duplicate (MS/MSD) for every sample batch, not to exceed 20 samples.

Request appropriate data deliverable (Category A or B) and an electronic data deliverable.

Groundwater Sampling for Emerging Contaminants

April 2018

Issue: NYSDEC has committed to analyzing representative groundwater samples at remediation sites for emerging contaminants (1,4-dioxane and PFAS) as described in the below guidance.

Implementation

NYSDEC project managers will be contacting site owners to schedule sampling for these chemicals. Only groundwater sampling is required. The number of samples required will be similar to the number of samples where "full TAL/TCL sampling" would typically be required in a remedial investigation. If sampling is not feasible (e.g., the site no longer has any monitoring wells in place), sampling may be waived on a site-specific basis after first considering potential sources of these chemicals and whether there are water supplies nearby.

Upon a new site being brought into any program (i.e., SSF, BCP), PFAS and 1,4-dioxane will be incorporated into the investigation of groundwater as part of the standard "full TAL/TCL" sampling. Until an SCO is established for PFAS, soil samples do not need to be analyzed for PFAS unless groundwater contamination is detected. Separate guidance will be developed to address sites where emerging contaminants are found in the groundwater. The analysis currently performed for SVOCs in soil is adequate for evaluation of 1,4-dioxane, which already has an established SCO.

Analysis and Reporting

Labs should provide a full category B deliverable, and a DUSR should be prepared by a data validator, and the electronic data submission should meet the requirements provided at: https://www.dec.ny.gov/chemical/62440.html ,

The work plan should explicitly describe analysis and reporting requirements.

PFAS sample analysis: Currently, ELAP does not offer certification for PFAS compounds in matrices other than finished drinking water. However, laboratories analyzing environmental samples (ex. soil, sediments, and groundwater) are required, by DER, to hold ELAP certification for PFOA and PFOS in drinking water by EPA Method 537 or ISO 25101.

Modified EPA Method 537 is the preferred method to use for groundwater samples due to the ability to achieve 2 ng/L (ppt) detection limits. If contract labs or work plans submitted by responsible parties indicate that they are not able to achieve similar reporting limits, the project manager should discuss this with a DER chemist. Note: Reporting limits for PFOA and PFOS should not exceed 2 ng/L.

PFAS sample reporting: DER has developed a PFAS target analyte list (below) with the intent of achieving reporting consistency between labs for commonly reportable analytes. It is expected that reported results for PFAS will include, at a minimum, all the compounds listed. This list may be updated in the future as new information is learned and as labs develop new capabilities. If lab and/or matrix specific issues are encountered for any particular compounds, the NYSDEC project manager will make case-by-case decisions as to whether particular analytes may be temporarily or permanently discontinued from analysis for each site. Any technical lab issues should be brought to the attention of a NYSDEC chemist.

Some sampling using this full PFAS target analyte list is needed to understand the nature of contamination. It may also be critical to differentiate PFAS compounds associated with a site from other

sources of these chemicals. Like routine refinements to parameter lists based on investigative findings, the full PFAS target analyte list may not be needed for all sampling intended to define the extent of contamination. Project managers may approve a shorter analyte list (e.g., just the UCMR3 list) for some reporting on a case by case basis.

1,4-Dioxane Analysis and Reporting: The method detection limit (MDL) for 1,4-dioxane should be no higher than 0.28 µg/l (ppb). ELAP offers certification for both EPA Methods 8260 and 8270. In order to get the appropriate detection limits, the lab would need to run either of these methods in "selective ion monitoring" (SIM) mode. DER is advising the use of method 8270, since this method provides a more robust extraction procedure, uses a larger sample volume, and is less vulnerable to interference from chlorinated solvents (we acknowledge that 8260 has been shown to have a higher recovery in some studies).

Full PFAS Target Analyte List

Group	Chemical Name	Abbreviation	CAS Number
Perfluoroalkyl sulfonates	**Perfluorobutanesulfonic acid**	**PFBS**	**375-73-5**
	Perfluorohexanesulfonic acid	**PFHxS**	**355-46-4**
	Perfluoroheptanesulfonic acid	PFHpS	375-92-8
	Perfluorooctanessulfonic acid	**PFOS**	**1763-23-1**
	Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluoroalkyl carboxylates	Perfluorobutanoic acid	PFBA	375-22-4
	Perfluoropentanoic acid	PFPeA	2706-90-3
	Perfluorohexanoic acid	PFHxA	307-24-4
	Perfluoroheptanoic acid	**PFHpA**	**375-85-9**
	Perfluorooctanoic acid	**PFOA**	**335-67-1**
	Perfluorononanoic acid	**PFNA**	**375-95-1**
	Perfluorodecanoic acid	PFDA	335-76-2
	Perfluoroundecanoic acid	PFUA/PFUdA	2058-94-8
	Perfluorododecanoic acid	PFDoA	307-55-1
	Perfluorotridecanoic acid	PFTriA/PFTrDA	72629-94-8
	Perfluorotetradecanoic acid	PFTA/PFTeDA	376-06-7
Fluorinated Telomer Sulfonates	6:2 Fluorotelomer sulfonate	6:2 FTS	27619-97-2
	8:2 Fluorotelomer sulfonate	8:2 FTS	39108-34-4
Perfluorooctane-sulfonamides	Perfluroroctanesulfonamide	FOSA	754-91-6
Perfluorooctane-sulfonamidoacetic acids	N-methyl perfluorooctanesulfonamidoacetic acid	N-MeFOSAA	2355-31-9
	N-ethyl perfluorooctanesulfonamidoacetic acid	N-EtFOSAA	2991-50-6

Bold entries depict the 6 original UCMR3 chemicals