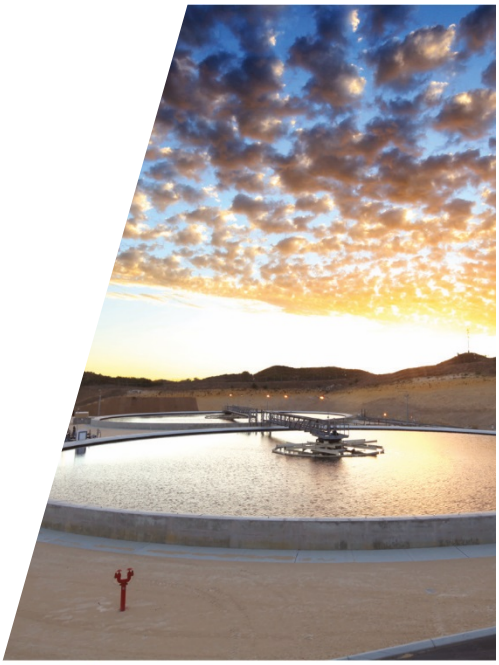
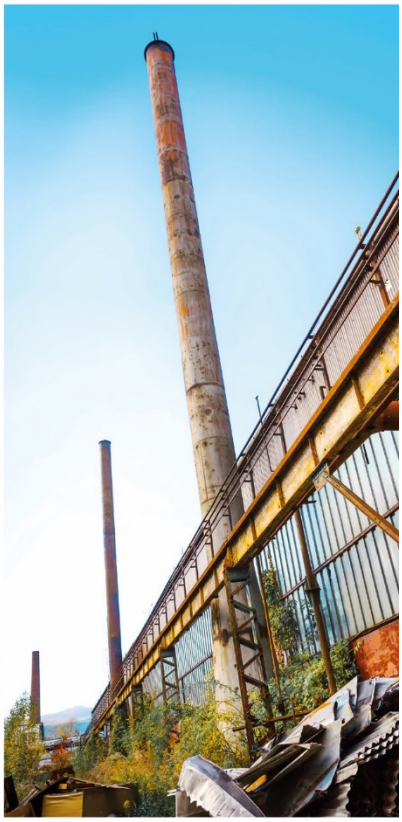


Emerging Contaminants Sampling Work Plan

Ex-Eaton Site
34-40 Clinton Street
Batavia, New York
NYSDEC Site No. C819022

Prepared for:
CNH Baumaschinen Industrial GmbH
Berlin, Germany



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 8
6274 East Avon-Lima Road, Avon, NY 14414-9516
P: (585) 226-5353 I F: (585) 226-8139
www.dec.ny.gov

November 26, 2019

Klauss Rekitt
c/o Ronald Hull, Esq.
Heisman Nunes & Hull, LLP
69 Cascade Drive, Suite 102
Rochester, New York 14614

Re: Ex-Eaton Site (#C819022)
22-40 Clinton Street, Batavia, Genesee County
Emerging Contaminants Sampling Work Plan,
October 23, 2019

Dear Mr. Rekitt;

The New York State Departments of Environmental Conservation (NYSDEC) and Health (collectively referred to as the Departments) have completed their review of the document entitled *"Emerging Contaminants Sampling Work Plan"* (the Work Plan) dated October 23, 2019 and prepared by GHD for the Ex-Eaton site. In accordance with 6 NYCRR Part 375-1.6, the Departments have determined that the Work Plan substantially addresses the requirements of the Emerging Contaminant Initiative and the Brownfield Cleanup Program. With the following modifications, the Work Plan is hereby approved:

1. The Master Schedule received on October 31, 2019 will be adhered to as the project schedule. The schedule is enforceable under the Brownfield Cleanup Agreement and is not estimated. Extensions to the approved schedule must be requested in writing and approved by NYSDEC.

2. Preliminary lab data (lab summary packages are acceptable) will be included in monthly progress reports once the data is received and will not be held until validation.

NYSDEC has determined that the Work Plan with the above modifications meets the requirements of the emerging contaminant sampling request and sampling guidance letters. With the understanding that the modified Work Plan is agreed to, the Work Plan is hereby approved. If you choose not to accept these modifications, you are required to notify this office within 15 days after receipt of this letter and prior to the start of field activities. In this event, I suggest a meeting be scheduled to discuss your concerns prior to the end of this period.

Please notify me at least 7 days in advance of the start of field activities.

By December 16, 2019, please attach a copy of this letter to the Work Plan and distribute the approved Work Plan as follows:

- Tasha Mumbrue (1 hard copy with an original signature);
- Julia Kenney (NYSDOH, electronic file/CD)
- The document repository at the Richmond Memorial Library, located at 19 Ross Street, Batavia, NY14020 (1 bound hard copy).

If you have questions or concerns, please contact me at (585) 226-5459 or tasha.mumbrue@dec.ny.gov.

Sincerely,

Tasha Mumbrue
Geologist Trainee

ec: Ronald Hull, HNH LLP
Dennis Hoyt, GHD
Margaret Popek, GHD
Julia Kenney, NYSDOH
Justin Deming, NYSDOH
Lisa Schwartz, NYSDEC
Frank Sowers, NYSDEC
Mike Cruden, NYSDEC
David Pratt, NYSDEC

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Figure Index

Appendix Index

1. Introduction

This Emerging Contaminants Sampling Work Plan (Work Plan) has been prepared on behalf of CNH Baumaschinen Industrial GmbH (CNH) to conduct groundwater sampling for 1,4-dioxane and per- and polyfluoroalkyl substances (PFAS) at the Ex-Eaton Site located at 34-40 Clinton Street in the City of Batavia, Genesee County, New York ("Site", Figure 1). This sampling was requested in a letter dated July 22, 2019 ("NYSDEC Request Letter") from the New York State Department of Environmental Conservation (NYSDEC). The NYSDEC Request Letter is included in this Work Plan as Appendix A.

This Work Plan was prepared in accordance with the protocols outlined in the following documents, which were included in the NYSDEC Request Letter:

- Groundwater Sampling for Emerging Contaminants, July 2018, issued by the NYSDEC
- Collection of Groundwater Samples for Perfluorooctanoic Acid (PFOA) and Perfluorinated Compounds (PFCs) from Monitoring Wells Sample Protocol, Revision 1.2, June 29, 2016, issued by the NYSDEC

The following sections provide the proposed groundwater sampling locations and sampling and reporting procedures that will be followed during the sampling event.

2. Sampling Locations

Based on conversations with the NYSDEC, six wells have been selected for analysis of PFAS and 1,4-dioxane, as depicted on Figure 2. These wells include two locations hydrologically up-gradient of the Site, three locations near the hydrologic down-gradient boundary of the Site, and one location proximate to Area of Concern (AOC) #2. For reference, a groundwater contour map based on a gauging event conducted on July 10, 2010 is included as Figure 3.

Groundwater samples will be collected from the following six monitoring wells:

- CRA-MW-001- shallow monitoring well up-gradient of the Site. Screened from 10.1 to 20.1 feet below ground surface (bgs) in sand.
- URS-33- shallow monitoring well up-gradient of the Site. Screened from 5.3 to 10.3 feet bgs in clay, silt, and silty sand.
- URS-11- shallow monitoring well proximate to AOC #2. Screened from 2.6 to 7.6 feet bgs in silty sand, sand, and clay.
- URS-15D- shallow monitoring well near the down-gradient boundary of the Site. Screened from 8.3 to 18.3 feet bgs in sand and gravel.
- URS-13D- shallow monitoring well near the down-gradient boundary of the Site. Screened from 9.2 to 19.2 feet bgs in sand and gravel.
- CRA-OSMW-007S- shallow monitoring well down-gradient of the Site. Screened from 10 to 15 feet bgs in sand and gravel.

3. Procedures

3.1 Groundwater Sampling for PFAS

The six monitoring wells to be sampled are currently equipped with dedicated low-density polyethylene (LDPE) or Teflon™ bailers. These bailers will be removed and discarded. The wells will subsequently be purged of at least five well volumes each with a peristaltic pump using low-flow sampling techniques to remove groundwater potentially contaminated with PFAS resulting from the presence of the LDPE or Teflon™ bailers. The tubing used in the peristaltic pump will be constructed of high-density polyethylene (HDPE) and silicone. Once a minimum of five well volumes have been purged from a well, low-flow purging will continue until field parameters have stabilized and a sample can be collected.

Groundwater and quality assurance/quality control (QA/QC) samples for PFAS analysis will be collected directly from the HDPE tubing into two laboratory-supplied 500 milliliter (mL) polypropylene or HDPE bottles fitted with unlined polypropylene or HDPE screw caps. Each sample bottle will be filled to the bottom of the neck of the bottle and not to the very top to ensure that the required preservative (Trizma®) is not flushed from the sample bottle. After filling and securely capping a bottle, the bottle will be inverted at least five times to ensure adequate distribution of preservative. Following sampling, the bottles will be labeled and placed in zip-lock bags on ice in a cooler that will only contain PFAS samples. As indicated in the documents included with the NYSDEC Request Letter, the cooler will be filled with ice to maintain a sample temperature of no more than 6 degrees C.

Purge water will be containerized into 55-gallon drums for disposal at a later date.

3.2 Groundwater Sampling for 1,4-Dioxane

Following collection of all samples for PFAS at a sampling location, the tubing will be removed from the well. Groundwater and QA/QC samples for 1,4-dioxane analysis will then be collected using new, dedicated HDPE bailers and placed into a minimum of two laboratory-supplied 500 mL unpreserved amber glass bottles. Following sampling, the bottles will be labeled and will immediately be placed in zip-lock bags on ice in a cooler that will only contain 1,4-dioxane samples. Following completion of sampling, the HDPE bailers will be placed into the wells to be used for future groundwater monitoring activities.

3.3 Quality Assurance/Quality Control Samples

As requested by the NYSDEC, one equipment blank, one duplicate sample, and one matrix spike/matrix spike duplicate (MS/MSD) sample will be collected during the sampling event, as follows:

- Equipment Blank: The equipment blank for PFAS analysis will be collected by pouring laboratory-supplied deionized, analyte-free water over a piece of new, unused HDPE peristaltic pump tubing and collecting the resulting sample in laboratory-supplied sample bottles. The equipment blank for 1,4-dioxane analysis will be collected by pouring laboratory-supplied deionized, analyte-free water over a new, unused HDPE bailer and collecting the resulting sample in laboratory-supplied sample vials.

- Duplicate Sample: One duplicate sample will be collected from monitoring well URS-13D for analysis of PFAS and 1,4-dioxane.
- MS/MSD: One MS/MSD sample pair will be collected from monitoring well CRA-OSMW-007S for analysis of PFAS and 1,4-dioxane.

3.4 Additional Considerations for PFAS Sampling

Due to the prevalence of PFAS in consumer products, additional considerations will be taken to minimize the potential for cross-contamination during the sampling event. A full list of prohibited and acceptable items for use during the sampling event and a field checklist to be completed by the field technician are included in this Work Plan as Appendix B. The major considerations are discussed below.

3.4.1 Order of Sample Collection

Due to the Teflon®-lined lids used for the 1,4-dioxane sample bottles, samples being collected for 1,4-dioxane analysis at a location will be collected after all samples for PFAS analysis, including QA/QC samples for PFAS analysis, have been collected, sealed, labeled, and packaged in the designated PFAS cooler at that location.

3.4.2 Sample Coolers

Containers for 1,4-dioxane sampling will be delivered to the field in a separate cooler, will be kept separate from the PFAS sample bottles for the duration of sampling, and will be returned to the laboratory in their own cooler, separate from the PFAS samples.

Each sample cooler will be filled with ice to maintain a sample temperature of no more than 6 degrees C. Ice will be "regular" ice (not blue ice) and will be double bagged.

3.4.3 Hand Washing and Nitrile Glove Use

Nitrile gloves will be worn during the entire sampling event. The GHD field technician will wash his hands with laboratory-provided analyte-free water and either Alconox® or Liquinox® prior to handling any sampling equipment or containers or putting on nitrile gloves. If a material suspected to contain PFAS is touched during the sampling event, the field technician will wash his hands again and put on a fresh pair of nitrile gloves. Hands will also be washed and new gloves will be donned prior to PFAS sample collection, prior to and following PFAS sample labeling, prior to and following handling the PFAS sample cooler, and upon arrival at a new sample location. Nitrile gloves will also be worn when labeling bottles and preparing coolers for shipment in order to avoid contact with adhesives that are necessary to perform these procedures, which could lead to contamination of the PFAS samples.

3.4.4 Equipment Decontamination

With the exception of the peristaltic pump, which does not make contact with the sample, it is anticipated that all equipment used will be dedicated to the specific sampling location and will not be reused.

4. Analysis

Samples will be analyzed for 1,4-dioxane and PFAS via United States Environmental Protection Agency (USEPA) Methods 8270 SIM and Modified Method 537, respectively. The PFAS target analyte list provided in the NYSDEC Request Letter (Appendix A) will be utilized. Laboratory analysis will be performed by Alpha Analytical (Alpha). This laboratory is certified for PFOA and PFOS in potable water in New York State, which is currently the only certification that the New York State Department of Health (NYSDOH) offers.

In accordance with the requirements in the NYSDEC Request Letter, concentrations of PFOA and PFOS will be reported to a reporting limit of 2 nanograms per liter (ng/L, parts per trillion [ppt]) and 1,4-dioxane will be analyzed with a method detection limit no higher than 0.35 micrograms per liter (µ/L, parts per billion [ppb]).

Alpha will provide a full Category B data deliverable. GHD chemists will perform analytical data validation and will prepare a data usability summary report (DUSR) and electronic data deliverable (EDD) in EQuIS™ format for submittal to the NYSDEC for the laboratory results.

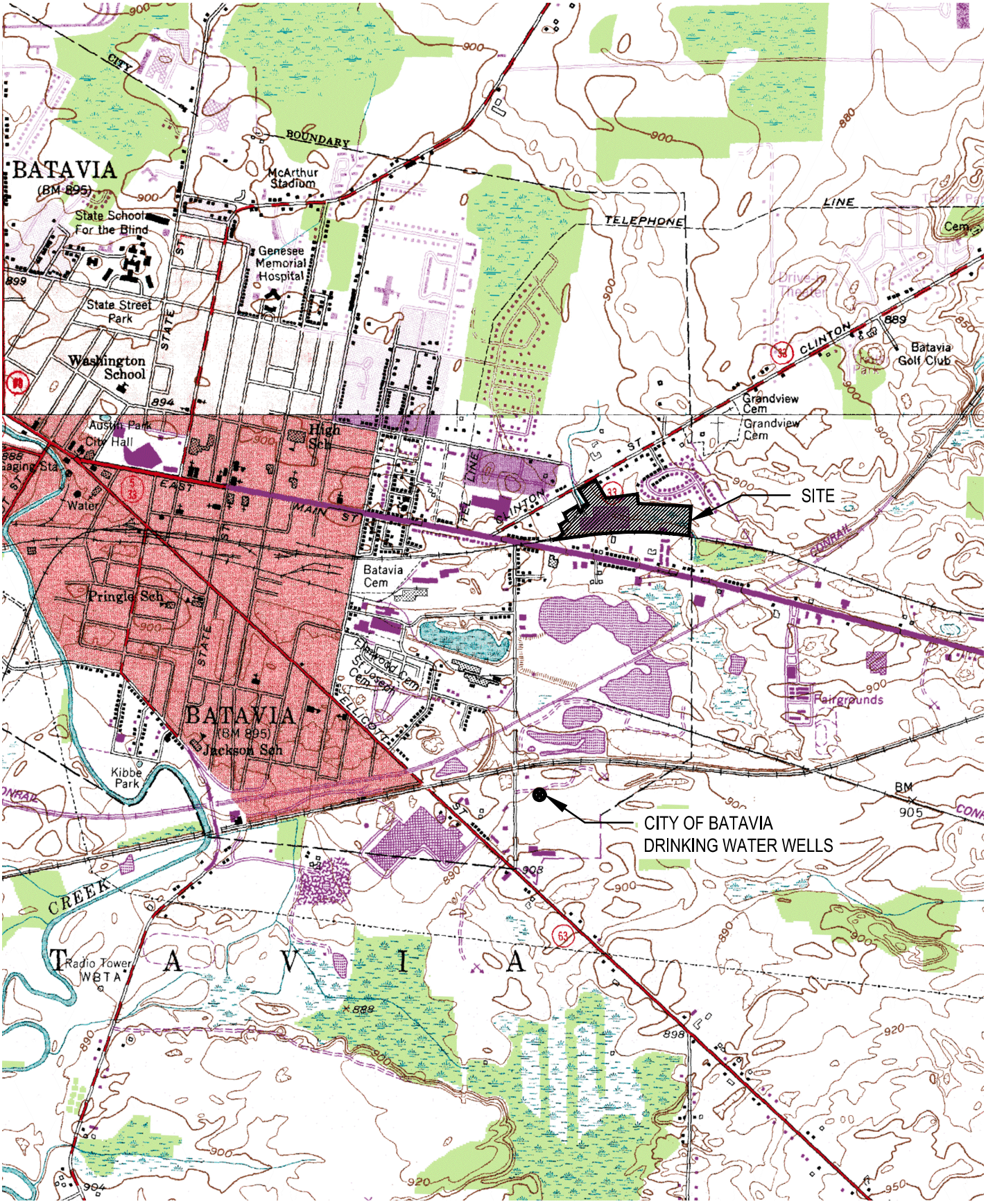
The laboratory report and a brief summary of the preliminary, unvalidated results will be included in the monthly progress report for the Site following receipt of the laboratory report from Alpha.

5. Schedule

This Emerging Contaminants Sampling Work Plan will be implemented following NYSDEC approval of the Work Plan. The NYSDEC will be given at least 7 calendar days' notice prior to the scheduled sampling date. Submittal of the raw data (laboratory report), data usability summary report (DUSR), EDD, and a final summary letter report will be completed in accordance with the approved Site schedule dated October 31, 2019. The Site schedule will be updated based on the November 26, 2019 approval of this Work Plan by the NYSDEC and NYSDOH.

6. Reporting

Following receipt and validation of the samples, a summary letter report will be prepared describing the work performed, sample locations, and, where applicable, comparison of results to regulatory guidance values and/or standards. The summary letter report will be submitted to the NYSDEC in accordance with the approved Site schedule.



SOURCE: USGS 7.5 MINUTE SERIES, TOPO QUAD: BATAVIA SOUTH, NY 1978

N

0 2000'

GHD

EX-EATON SITE (C819022)
EMERGING CONTAMINANTS SAMPLING WORK PLAN - BROWNFIELD CLEANUP PROGRAM

SITE LOCATION AND VICINITY MAP

Project No. **048547**
Report No. **030**
Date **OCT 2019**

FIGURE 1

Filename: N:\US\Niagara Falls\Legacy\Drawings\48000s\48547\48547-REPORTS\48547-00(030)\Figures\48547(030) - Figure 1.dwg
Plot Date: 27 November 2019 - 1:34 PM

NOTES:

1. AOCs #1 THROUGH #3 ARE DEFINED BY THE LIMITS OF THE PART 375 PROTECTION OF GROUNDWATER VOC EXCEEDANCES IN SOIL.
2. AOCs #4 AND #5 ARE DEFINED AS SUSPECTED HISTORICAL SOURCE AREAS FOR GROUNDWATER VOC EXCEEDANCES BENEATH THE MAIN BUILDING.
3. SITE BOUNDARIES ARE APPROXIMATE.

LEGEND

- PROPOSED SAMPLING LOCATION
- MONITORING WELL
- SOIL BORING/ SAMPLE LOCATION
- FENCE LINE
- BOUNDARY OF AOC
- FORMER ERIE RAILROAD
- DRAINAGE DITCH
- SITE
- FACILITY

N

0 150'

GHD

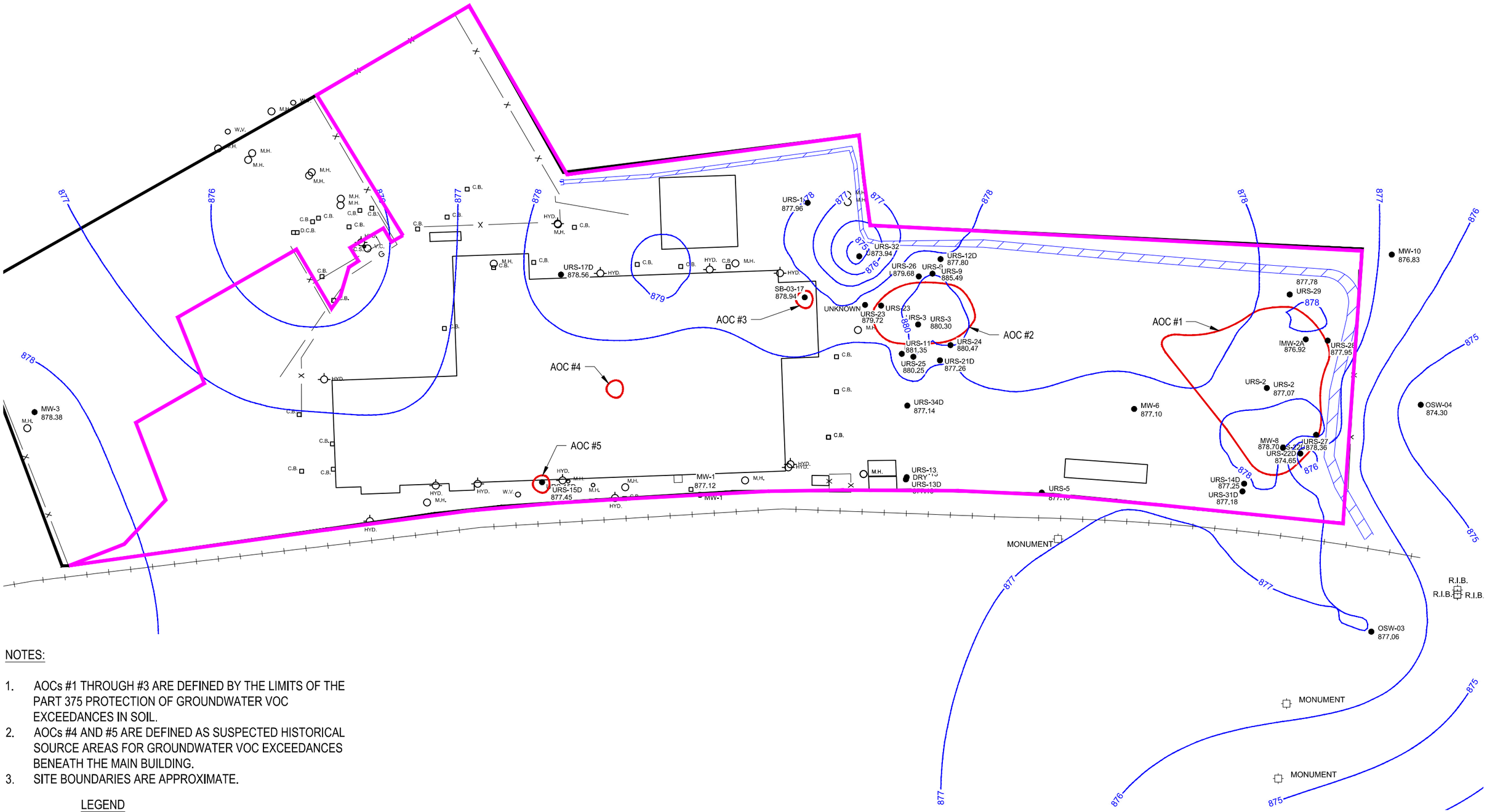
EX-EATON SITE (C819022)
EMERGING CONTAMINANTS SAMPLING WORK PLAN - BROWNFIELD CLEANUP PROGRAM

PROPOSED GROUNDWATER SAMPLING LOCATIONS FOR EMERGING CONTAMINANTS

Project No. **048547**
Report No. **030**
Date **OCT 2019**

FIGURE 2

Filename: N:\US\Niagara Falls\Legacy\Drawings\48000s\48547\48547-REPORTS\48547-00(030)\Figures\48547(030) - Figure 2.dwg
Plot Date: 22 October 2019 - 11:35 AM



NOTES:

1. AOCs #1 THROUGH #3 ARE DEFINED BY THE LIMITS OF THE PART 375 PROTECTION OF GROUNDWATER VOC EXCEEDANCES IN SOIL.
2. AOCs #4 AND #5 ARE DEFINED AS SUSPECTED HISTORICAL SOURCE AREAS FOR GROUNDWATER VOC EXCEEDANCES BENEATH THE MAIN BUILDING.
3. SITE BOUNDARIES ARE APPROXIMATE.

LEGEND

- MW-6 877.10 — MONITORING WELL ID & GW ELEVATION (FEET ABOVE MEAN SEA LEVEL)
- x — FENCE LINE
- FORMER ERIE RAILROAD
- BOUNDARY OF AOC
- DRAINAGE DITCH
- SITE
- FACILITY
- GROUNDWATER ELEVATION (FEET ABOVE SEA LEVEL)

N

0 150'

GHD

EX-EATON SITE (C819022)
EMERGING CONTAMINANTS SAMPLING WORK PLAN - BROWNFIELD CLEANUP PROGRAM

GROUNDWATER CONTOUR MAP JULY 10, 2010

Project No. **048547**
Report No. **030**
Date **OCT 2019**

FIGURE 3

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Plot Date: 22 October 2019 - 11:35 AM

Appendices

Appendix A
NYSDEC Request Letter for Sampling of Emerging Contaminants

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 8
6274 East Avon-Lima Road, Avon, NY 14414-9516
P: (585) 226-5353 I F: (585) 226-8139
www.dec.ny.gov

Via E-mail

Heisman Nunes & Hull, LLP
69 Cascade Drive, Suite 102
Rochester, NY 14614
Attn: Ronald Hull

22 July 2019

RE: Request for sampling of Emerging Contaminants
Ex-Eaton Site #c819022

Dear Mr. Hull:

The New York State Department of Environmental Conservation (DEC) is undertaking a Statewide evaluation of remediation sites to better understand the risk posed to New Yorkers by 1,4-dioxane and per- and polyfluoroalkyl substances (PFAS). PFAS have historically not been evaluated at remediation sites, and 1,4-dioxane has not been evaluated at the levels that are now thought to represent a health concern. This initiative is being undertaken as a result of these “emerging contaminants” having been found in a number of drinking water supplies in New York. Accordingly, the DEC is requiring that you test site groundwater for these chemicals. To accommodate this requirement, a select number of existing monitoring wells, representative of the potential of the above-referenced site to be a source of these emerging contaminants, must be sampled. DEC recommends that at least one of these wells should be upgradient of the site.

The attached guidance provides information on the analytical methods and reporting requirements. A second guidance document describes special precautions that need to be considered when sampling for PFAS.

Please prepare a draft letter work plan that identifies the wells proposed for sampling, brief description of the sampling methods, and anticipated sampling date within the next 60 days. If you wish to discuss the scope of the requested water testing, please contact me at 585-226-5480 or timothy.schneider@dec.ny.gov.

Sincerely,

Timothy Schneider, P.E.
Professional Engineer 1

B. Schilling

M. Cruden
L. Schwartz
J. Kenney

Groundwater Sampling for Emerging Contaminants

July 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 an independent 3rd party data validator. QA/QC samples should be collected as required in DER-10, Section 2.3(c). 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) reporting 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 0.35 µg/l (ppb). Although ELAP offers certification for both EPA Method 8260 SIM and EPA Method 8270 SIM, DER is advising the use of method 8270 SIM. EPA Method 8270 SIM provides a more robust extraction procedure, uses a larger sample volume, and is less vulnerable to interference from chlorinated solvents.

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

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.

Appendix B
PFAS Sampling Checklist and PFAS Sampling-Prohibited and Acceptable Items

PFAS Sampling Checklist

Date: _____

Weather (temp./precipitation): _____ Site Name: _____

Field Clothing and PPE:

- ☐ No clothing or boots containing Gore-Tex™
- ☐ All safety boots made from polyurethane and PVC
- ☐ No materials containing Tyvek®
- ☐ Field crew has not used fabric softener on clothing
- ☐ Field crew has not used cosmetics, moisturizers, hand cream, or other related products this morning
- ☐ Field crew has not applied unauthorized sunscreen or insect repellant

Field Equipment:

- ☐ No Teflon® or LDPE containing materials on-site
- ☐ All sample materials made from stainless steel, HDPE, acetate, silicon, or polypropylene
- ☐ No waterproof field books on-site
- ☐ No plastic clipboards, binders, or spiral hard cover notebooks on-site
- ☐ No adhesives (Post-It Notes) on-site
- ☐ Coolers filled with regular ice only. No chemical (blue) ice packs in possession

Sample Containers:

- ☐ All sample containers made of HDPE
- ☐ Caps are unlined and made of HDPE

Wet Weather (as applicable):

- ☐ Wet weather gear made of polyurethane and PVC only

Equipment Decontamination:

- ☐ "PFAS-free" water on-site for decontamination of sample equipment. No other water sources to be used
- ☐ Alconox and Liquinox to be used as decontamination materials

Food Considerations:

- ☐ No food or drink on-site with exception of bottled water and/or hydration drinks (i.e., Gatorade and Powerade) that is available for consumption only in the staging area

If any applicable boxes cannot be checked, the Field Lead shall describe the noncompliance issues below and work with Field personnel to address noncompliance issues prior to commencement of that day's work. Corrective action shall include removal of noncompliance items from the site or removal of worker offsite until in compliance.

Describe the noncompliance issues (include personnel not in compliance) and action/outcome of noncompliance:

_____

_____

_____

_____

Field Lead Name: _____

Field Lead Signature: _____ Time: _____

PFAS Sampling
Prohibited and Acceptable Items

Prohibited	Acceptable
Field Equipment	
Teflon® containing materials	High-density polyethylene (HDPE) materials
Low density polyethylene (LDPE) materials	Acetate Liners
Waterproof field books	Silicon Tubing
Plastic clipboards, binders, or spiral hard cover notebooks	Loose paper (non-waterproof)
Post-It Notes®	Aluminum field clipboards or with Masonite
Chemical (blue) ice packs	Sharpies®, pens
	Regular ice
Field Clothing and PPE	
New cotton clothing or synthetic water resistant, waterproof, or stain-treated clothing, clothing containing Gore-Tex™	Well-laundered clothing made of natural fibers (preferable cotton)
Clothing laundered using fabric softener	No fabric softener
Boots containing Gore-Tex™	Boots made with polyurethane and PVC
Tyvek®	Cotton clothing
No cosmetics, moisturizers, hand cream, or other related products as part of personal cleaning/showering routine on the morning of sampling	**Sunscreens** - Alba Organics Natural Sunscreen, Yes To Cucumbers, Aubrey Organics, Jason Natural Sun Block, Kiss my face, Baby sunscreens that are “free” or “natural” **Insect Repellents** - Jason Natural Quit Bugging Me, Repel Lemon Eucalyptus Insect repellant, Herbal Armor, California Baby Natural Bug Spray, BabyGanics **Sunscreen and insect repellant -** Avon Skin So Soft Bug Guard Plus – SPF 30 Lotion
Sample Containers	
LDPE or glass containers	HDPE
Teflon-lined caps	Unlined HDPE caps
Rain Events	
Waterproof or resistant rain gear	Gazebo tent that is only touched or moved prior to and following sampling activities
Equipment Decontamination	
Decon 90®	Alconox® and/or Liquinox®
Water from an on-site well	PFAS-free water
Food Considerations	
All food and drink, with exceptions noted on right	Bottled water and hydration fluids (i.e., Gatorade® and Powerade®) to be brought and consumed only in the staging areas

about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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