2022 Site Investigation for Per- and Polyfluoroalkyl Substances (PFAS)

Chippewa Valley Regional Airport
3800 Starr Avenue
Eau Claire, Wisconsin

WDNR BRRTS No.: 02-09-588115

AECOM Project number: 60669304

January 13, 2023

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Revision History

Revision	Revision date	Details	Authorized	Name	Position

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I, Andrew Mott, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, am registered in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code, or licensed in accordance with the requirements of ch. GHSS 3, Wis. Adm. Code, and that, to the best of my knowledge, the information contained in this document is correct and the document was prepared in compliance with applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

Andrew Mott, P.G., CPG
Hydrogeologist, Project Manager

I, David Henderson, hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, information contained in this document is correct and the document was prepared in compliance with applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

David Henderson, P.E.
Project Engineer

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Executive Summary

AECOM Technical Services, Inc. (AECOM) was retained by the Chippewa Valley Regional Airport (CVRA) to conduct an environmental site investigation (SI) for per- and polyfluoroalkyl substances (PFAS) on the airport property located at 3800 Starr Avenue, Eau Claire, Eau Claire County, Wisconsin. The site investigation scope of work agrees with the Wisconsin Department of Natural Resources' (WDNR or Department) review and approval of AECOM's Site Investigation Work Plan and is presented in accordance with Wisconsin Administrative Code Chapter NR 716 *Site Investigation* requirements. The site investigation was proposed to be conducted in a phased approach, with the initial scope-of-work conducted during 2022.

The airport was originally owned and operated by the City of Eau Claire from its inception in 1945 until 1978 when ownership was transferred to Eau Claire County. In 1992, the Eau Claire County Board of Supervisors created the Chippewa Valley Regional Airport Commission, this was followed in 1999 by an Ownership and Operation Agreement between Chippewa, Dunn, and Eau Claire Counties. The Ownership and Operational Agreement evolved to include only Chippewa and Eau Claire Counties as it continues in-effect today.

CVRA is a Federal Aviation Administration (FAA) Title 14 Code of Federal Regulation Part 139 Airport. As part of that title requirement, the airport was required to perform annual testing of the Aqueous Film Forming Foam (AFFF) fire suppression operating systems on the aircraft rescue and firefighting vehicles, until the rule was revised in 2019. CVRA has not discharged AFFF during testing since the 2019 rule change.

On July 6, 2021, the City of Eau Claire notified the Department that PFAS was detected in the City's municipal well field, adjacent to and southwest of the airport property. Based on the Department's review of groundwater flow paths and the FAA's historically mandated use of AFFF at the airport, the Department issued a Responsible Party (RP) letter to the airport on August 5, 2021, (i.e., BRRTS No. 02-09-588115 *Chippewa Valley Airport PFAS).* CVRA began site investigation scoping and investigation activities upon receipt of the RP letter.

CVRA and AECOM provided a Site Investigation Work Plan for Per- and Polyfluoroalkyl Substances (PFAS) to the WDNR on November 18, 2021. Department provided review comments on the work plan that CVRA and AECOM acknowledged and incorporated into the final site investigation scope of work. The Department provided formal approval of the work plan on January 11, 2022.

In addition to WDNR's environmental regulatory oversight, construction activities within the airport's 'airside operations area' are regulated by the FAA. Once CVRA received WDNR's formal approval of the site investigation work plan, CVRA and the airport engineer prepared and submitted to the FAA a *Notice of Proposed Construction or Alteration* (FAA Form 7460-1) for the drilling and construction of the site investigation monitoring wells. The notice was filed on January 18, 2022, and CVRA received FAA approval for the proposed work dated March 16, 2022.

During site investigation scoping activities CVRA and AECOM identified four initial Areas of Concern (AOCs) plus an assumed downgradient groundwater monitoring location based on evaluation of site background information, the use of AFFF, and a review of receptors including groundwater and surface water.

The principal receptors associated with the Site include:

- The City of Eau Claire municipal well field located downgradient from, and adjacent to, the southwest corner of the airport property,
- private potable wells located within the Village of Lake Hallie, to the northwest, north, and northeast of the airport property, and
- the Chippewa River, which flows generally from north to south in a meander such that it's located to the north, west, and southwest of the Site.

The AOCs included in the initial site investigation scope of work included:

Assumed Downgradient Monitoring Location: Downgradient soil borings and monitoring wells were located along the west-central airport fence line to assist with determining groundwater flow direction and to identify groundwater impacts to the west of the AFFF Testing AOC.

AFFF Testing AOC: The AFFF testing AOC located just north of the fuel farm area.

Live Fire Training AOCs: Two Live Fire Training areas were identified on airport property. Live Fire Training Area #1, at the South Hangar Ramp, and Live Fire Training Area #2, at the Runway 32 Runup Pad, which was also the location of a possible AFFF discharge.

Aircraft Accident Site AOC: AFFF was discharged as a vapor suppression measure following a small plane accident just west of the Runway 14-32 and Runway 04-22 intersection. Soil from the area was excavated and transported for disposal. However, confirmation sampling for PFAS was not performed to determine if all the impacted soil was removed. A hand auger soil boring was located at the aircraft accident site to obtain a soil confirmation sample.

The initial groundwater monitoring also included sampling a limited number of existing monitoring wells located on airport property associated with the National Presto Industries (NPI) Superfund National Priorities List site (EPA Site ID WID006196174, WDNR BRRTS Activity No. 02-09-000267).

Site investigation field activities were initiated on May 10, through 13, 2022, and included advancing a total of five soil borings and one hand auger boring, PFAS soil sampling, and the installation of five groundwater monitoring wells. A single round of PFAS groundwater monitoring was conducted on June 6th, 7th, and 8th, 2022.

The area wide geologic setting appears to be buried pre-glacial sandstone and granite bedrock valleys below glacial sand and gravel outwash deposits. AECOM's site investigation soil borings were advanced to a maximum of 90 feet (ft) below ground surface (bgs). Soils at the site were typically categorized as poorly graded sands with gravel (SP) and/or silty sands with gravel (SM) to the depth of the investigated interval. These soils are typical of glacial outwash/lacustrine deposits.

The area wide direction of groundwater flow is reportedly controlled by the sandstone and granite bedrock valleys beneath the sand and gravel aquifer with interpreted groundwater flow directions to the northwest towards Lake Hallie, to the west towards the Chippewa River, and to the southwest towards the City of Eau Claire well field. AECOM's elevation field data indicates depths to groundwater ranging from approximately 65 to 81 ft bgs and an interpreted groundwater flow direction to the west, towards the Chippewa River, with an average calculated horizontal hydraulic gradient of 0.0059 ft/ft.

A summary of the soil analytical results indicates:

- The AFFF Testing AOC and the Live Fire Training AOC Area #2 are both source areas for PFAS.
- The Aircraft Accident Site AOC post-accident soil excavation activity was successful in removing AFFF impacts.
- The Downgradient Monitoring Location and the Live Fire Training AOC Area #1 are not PFAS source areas.

A summary of the groundwater analytical results shows:

- Groundwater results confirm that both the AFFF Testing AOC and the Live Fire Training AOC Area #2 are PFAS source areas with impacts above proposed NR 140 Enforcement Standards (ESs).
- Downgradient Monitoring along the west central fence line indicate PFAS impacts above proposed NR 140 Preventive Action Limits (PALs).
- That the Live Fire Training AOC Area #1 and the NPI Mid-field Monitoring Wells have proposed PAL exceedances, possibly indicating a comingled plume from the AFFF Testing and the Live Fire Training Area #2 AOC source areas.

AECOM has identified the following data gaps and recommendations based on the results of the initial investigation:

Data Gap #1, Horizontal Delineation of Soil Impacts, AFFF Testing AOC: AECOM recommends advancing hand-auger soil borings to delineate the horizontal extent of PFAS soil impacts at the AFFF Testing AOC.

Data Gap #2, Horizontal Delineation of Soil Impacts, Live Fire Training AOC Area #2: AECOM recommends advancing hand-auger soil borings to delineate the horizontal extent of PFAS soil impacts at the Live Fire Training AOC Area #2.

Data Gap #3, Horizontal Delineation of Groundwater Impacts: Groundwater impacts from the two identified source areas (i.e., AFFF Testing AOC and the Live Fire Training AOC Area #2) appear to be comingled into one groundwater plume. The next phase of groundwater investigation activities will work to delineate the plume.

AECOM anticipates that this will include a significant effort to inventory and confirm the presence of existing third party monitoring wells (i.e., NPI, WDNR, and City of Eau Claire monitoring wells) in the vicinity of the airport. A selection of the viable existing wells, in concert with new monitoring wells installed on airport property, will form the monitoring network for the next phase of groundwater monitoring activities.

The preliminary scope of work for the next phase of the groundwater investigation, described by cardinal compass direction, includes the following:

- West, install wells on airport property.
- Northwest, install wells on airport property.
- Northeast, install wells on airport property and monitor third party wells off-site.
- East, monitor third party wells off-site.
- Southeast, install wells on airport property.
- South, monitor third party wells on-site.
- Southwest, monitor third party wells on-site or off-site.

CVRA and AECOM will provide the Department with a Supplemental Site Investigation Work Plan presenting the details of the supplemental investigation.

1. Introduction

1.1 Purpose

AECOM Technical Services, Inc. (AECOM) was retained by the Chippewa Valley Regional Airport (CVRA) to conduct an environmental site investigation (SI) for per- and polyfluoroalkyl substances (PFAS) on the airport property located at 3800 Starr Avenue, Eau Claire, Chippewa County, Wisconsin (Subject Property).

The scope of work presented in the site investigation report (SIR) agrees with the Wisconsin Department of Natural Resources' (WDNR or Department) review and approval of AECOM's site investigation work plan and is presented in accordance with Wisconsin Administrative Code (WAC) Chapter NR 716 *Site Investigation* requirements.

The report includes, site description and location, background information, project team, site physical characteristics, investigation methods, results, data gaps, and recommendations.

1.2 Site Location and Parcel Description

The Subject Property is located 3800 Starr Avenue in the City of Eau Claire, Chippewa County, Wisconsin, **Figure 1**. The property is further described as located in the northeast section in Township 28N, Range 09W, in several sections. The Wisconsin Transverse Mercator (WTM) coordinates for the main terminal building on the property are 402844.3, 488743.2.

The Subject Property contains multiple parcels with the main parcel identified as Tax Parcel ID Number 09221-2-280933-220-0001 (Alternate Tax Parcel Number 221160377). In total, the parcels consist of approximately 852 acres of land that is operated by the Chippewa Valley Regional Airport Commission. The general layout of the Subject Property is illustrated on the attached **Figure 2**.

1.3 Surrounding Properties

The land use in the vicinity of the Site is a mix of light industrial, commercial, and residential properties. Bordering the property to the north is undeveloped park land with residential properties along the Chippewa River. To the east there are commercial and light industrial properties with residential properties beyond. To the south there are commercial, light industrial, and residential properties. The City of Eau Claire municipal well field is directly southwest of the airport with the Chippewa River beyond. To the west are residential properties along the river.

1.4 Site Background

AECOM's historical research (i.e., 1939 historical aerial photo[1]) indicates that portions of the Site and surrounding area were developed prior to 1939 for agricultural purposes.

The Site is operated by the Chippewa Valley Regional Airport Commission. Based on CVRA's historical information on their website[2], starting in 1939, efforts to develop an airport at its current location began. On July 29, 1945, the Eau Claire Municipal Airport announced its formal opening. The airport was owned by the City of Eau Claire until 1979, when ownership was transferred to the County. Per the transfer agreement, dated December 27, 1978, the City of Eau Claire would continue to provide Crash-Fire-Rescue (CFR) services until 1981. The agreement also included a continuation of CFR services renewal clause. In 1988, a fire station was constructed on the airport property to meet Federal Aviation Administration (FAA) requirements. Prior to that time, the City of Eau Claire provided fire protection at the airport from Station #8 at 3510 Starr Avenue, adjacent to the airport property. In 1992, the Eau Claire County Board of Supervisors created the Chippewa Valley Regional Airport Commission, this was followed in 1999 by an Ownership and Operation Agreement between Chippewa, Dunn, and Eau Claire Counties. The Ownership and Operational Agreement evolved to include only Chippewa and Eau Claire Counties as it continues in-effect today.

CVRA is a FAA Title 14 Code of Federal Regulation (CFR) Part 139 Airport. As part of that title requirement, the airport was required to perform annual testing of the Aqueous Film Forming Foam (AFFF) fire suppression operating

[1] https://maps.sco.wisc.edu/WHAIFinder/#13/44.8625/-91.4880
[2] https://www.chippewavalleyairport.com/about-the-airport/history

systems on the aircraft rescue and firefighting (ARFF) vehicles, until the rule was revised[3] in 2019. During a site visit on October 21, 2021, AECOM personnel were escorted around the property by Mr. Todd Norrell, Maintenance Supervisor for the airport. The tour included multiple areas of the property associated with AFFF storage, use, and possible use locations.

AFFF Storage: ARFF Fire Station, the airport fire department's fire rescue ARFF Unit R1 is parked at the station. The ARFF vehicle contains approximately 210 gallons of AFFF on-board for emergency use. AFFF has reportedly also been historically stored within the ARFF Fire Station building.

The Snow Removal Equipment (SRE) and maintenance building is where the airport's ARFF Unit R2 is parked. Unit R2 contains approximately 130 gallons of AFFF on-board for emergency use. Additionally, the airport currently stores its FAA required back-up volume of AFFF in the SRE building. AECOM observed stored containers of Chemguard 3% AFFF Aqueous Film-Forming Foam Concentrate, Product ID: C306-MS-C and a single older empty container of National Foam, Aer-O-Water, 3EM, 3% Aqueous Film Forming Foam. The storage area was in good condition with no observable spillage of AFFF.

CVRA purchasing records indicate a total of 54 five-gallon pails of Chemgaurd 3% AFFF Foam Concentrate have been purchased from 2013 through 2019. This material is currently either stored on ARFF vehicles, stored within the SRE Building, or has been used during FAA required AFFF testing.

AFFF Testing Area: Prior to 2019, the FAA required ARFF vehicle AFFF testing. The AFFF testing area was located northeast of the onsite fuel farm, see **Figure 2**. CVRA staff estimate that 15 to 25 gallons of AFFF foam concentrate was discharged once a year for an unspecified number of years at this location. It was reported during site contact interviews that the ARFF vehicle would park on the asphalt drive north of the fuel farm, near the intersection of the perimeter access road, and direct the AFFF foam towards the northeast, onto a green space area.

Since 2020, CVRA has conducted testing of the ARFF vehicle AFFF fire suppression operating system using the FAA approved E-One, Eco-Logic system. Therefore, live AFFF testing has not occurred since 2019.

Live Fire Training: It was reported during site contact interviews that live fire training with water was conducted at two areas on the airport property, see **Figure 2**. During live fire training, the ARFF vehicle is used to extinguish propane fires contained within fire-training-pans. During these trainings, discharge of PFAS impacted water may possibly have occurred due to cross-contamination because the same ARFF vehicle(s) and equipment are used for the live fire training and the AFFF testing.

AECOM's designated Live Fire Training Area 1 is located on the South Hangar Ramp. Live fire trainings are traditionally conducted on this ramp. Live fire training has occasionally been conducted at the Live Fire Training Area 2, located on the Runway 32 Runup Pad, just southwest of the SRE building. There is anecdotal verbal history that a small accidental discharge of AFFF may have occurred on the Runway 32 Runup Pad location during a live fire training. The year of the discharge is unknown.

Water discharged during live fire training appears to be contained on the airport property.

Aircraft Accident Site: It was reported during site contact interviews that the only use of AFFF for an aircraft accident in the last 15 years occurred on April 30, 2021, near the north-northeast corner of the intersection of 14/32 Runway and 4/22 Runway, **Figure 2**. At the time, a small quantity of AFFF was deployed as a fuel spill vapor suppression measure. Soil from the area was excavated and transported for disposal to the Chemical Waste Management hazardous waste facility in Emelle Alabama. The spill was reported to the Department's Bureau for Remediation and Redevelopment Tracking System (BRRTS), noted as BRRTS No. 04-09-587882.

Burn Pits: According to CVRA staff, there are no known burn pits located on the airport property.

Hangar Fire Suppression Systems: CVRA staff report that there are currently no AFFF fixed-base fire suppression systems within hangars at the airport.

Other Environmental Investigations: There are several groundwater monitoring wells located on and off the property that are associated with the National Presto Industries (NPI) Superfund National Priorities List site (EPA Site ID

[3] FAA National Part 139 CertAlert No. 19-01

WID006196174, WDNR BRRTS Activity No. 02-09-000267). These monitoring wells were installed to assess the chlorinated volatile organic compound (CVOC) solvent groundwater plume that originated at the NPI site, 3925 North Hastings Way, approximately 1.25 miles east of the airport. CVOC impacted groundwater from the NPI site has been identified as flowing under the airport property and impacting the City of Eau Claire municipal well field, southwest of the airport property.

During discussions and email exchanges with Mr. Cliff Wright of Gannett Fleming, Inc., NPI's environmental consultant, the groundwater sampling method for the on-airport monitoring well nests was identified to be via Eon™ Passive Samplers. Mr. Wright provided information from Eon™ on the materials used to manufacture the passive samplers, which notes that the materials are "PFAS-Free". According to Mr. Wright, the only wells that are actively sampled utilizing the passive samplers within the fenced area of the airport property are MW-51b, MW-52a/b, MW-53b, MW-54b/c, and MW-55b, **Figure 2**.

Additionally, in 2018 Gannett Fleming, at the request of the U.S. Environmental Protection Agency (EPA) conducted PFAS sampling of groundwater associated with Lagoon #1 at the NPI site. A February 11, 2019, letter report[4] to the EPA documents the sampling effort and the laboratory results. The report indicates that Lagoon #1 at the NPI site is not a source area for PFAS. The EPA responded in a December 18, 2019, email[5] that the "… EPA agrees that the requirement to perform the sampling has been met and also agrees that no further sampling is necessary at his time." The EPA did state that further review may be necessary in the future.

1.5 WDNR Regulatory Status

The WDNR manages environmental records under both a Facility ID Number (FID # 609109380) and using the Bureau for Remediation and Redevelopment Tracking System. AECOM searched the BRRTS system for information regarding the site. A total of 11 BRRTS activity numbers are associated with the airport, **Figure 2**. Three leaking underground storage tank (LUST) sites have been reviewed and closed. Six Spill reports have been closed and one Environmental Repair Program (ERP) site has been reviewed and closed. None of these closed sites relate to the current PFAS investigation.

There is one closed Spill entry for a release of AFFF under BRRTS No. 04-09-587882, *Airport Fire Department Spill*, following a small plane accident on April 30, 2021. A small quantity of AFFF was reportedly dispensed from the airport's ARFF Striker vehicle as a vapor suppression measure to cover fuel dripping from the wing of the plane. Same-day post-crash mitigation measures included the excavation of approximately 1.25 cubic yards of soil from the accident location. On June 23, 2021, the excavated soil was transported for disposal, under waste manifest No. 174804, to Chemical Waste Management's hazardous waste disposal facility (permit No. ALD000622464) in Emelle, Alabama.

On July 6, 2021, the City of Eau Claire notified the Department that PFAS was detected in the City's municipal well field, adjacent to and southwest of the airport property. Based on the Department's review of groundwater flow paths and the FAA's historically mandated use of AFFF at the airport, the Department issued a Responsible Party (RP) letter to the airport on August 5, 2021, (i.e., BRRTS No. 02-09-588115 *Chippewa Valley Airport PFAS).*

On November 18, 2021, CVRA and AECOM submitted a Site Investigation Work Plan for Per- and Polyfluoroalkyl Substances (PFAS)[6] to the WDNR. The work plan included a WDNR required PFAS Scoping Statement that assessed the historical data for the potential use of emerging contaminants at the Site. The Department provided review comments[7] on the work plan that CVRA and AECOM acknowledged[8] and incorporated into the final site investigation scope of work. The Department provided formal approval[9] of the work plan on January 11, 2022.

[4] *Groundwater Analytical Results for perfluoroalkyl Substances Analysis*, National Presto Industries., Eau Claire, Wisconsin, Gannett Fleming, February 11, 2019
[5] RE: *PFAS Sampling at NPI*, email from Caine, Howard (EPA) to Wright, Clifford (Gannett Fleming) dated Wednesday December 18, 2019, 11:37 AM
[6] *Site Investigation Work Plan for Per- and Polyfluoroalkyl Substances (PFAS)*, Chippewa Valley Regional Airport, 3800 Starr Avenue, Eau Claire, Wisconsin, AECOM, November 18, 2021
[7] *Site Investigation Work Plan – Department Comments*, WDNR letter, December 22, 2021
[8] *Response to WDNR's Site Investigation Work Plan – Department Comments*, Chippewa Valley Regional Airport PFAS Site Investigation Work Plan, AECOM, December 23, 2021.
[9] *Approval – Updated Site Investigation Work Plan*, WDNR letter, January 11, 2022.

1.6 FAA Regulatory Status

Construction activities within the airport's 'airside operations area' are regulated by the FAA. Once CVRA received WDNR's formal approval of the site investigation work plan, CVRA and the airport engineer prepared and submitted to the FAA a *Notice of Proposed Construction or Alteration* (FAA Form 7460-1) for the drilling and construction of the monitoring wells. The notice was filed on January 18, 2022, and CVRA received FAA approval for the proposed work dated March 16, 2022.

1.7 Project Team

The project team involved in the SI activities and groundwater monitoring included:

Responsible Party
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AECOM Technical Services, Inc. (AECOM)
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1.8 Scope of Work

AECOM identified four initial Areas of Concern (AOCs) plus an assumed downgradient monitoring location based on evaluation of site background information, the use of AFFF, and a review of receptors including groundwater and surface water. The investigation was proposed to be conducted in a phased approach, with the scope-of-work for the initial phase as summarized below.

The initial site investigation included a combination of soil sampling, obtained using a hand auger or a drill rig, along with the conversion of soil borings into NR 141 compliant groundwater monitoring wells. Existing NPI monitoring wells located on the airport property were also used for groundwater elevation measurements and groundwater sampling. The AOC's, see **Figure 2**, that were investigated included:

Assumed Downgradient Monitoring Location – AECOM understands that the City of Eau Claire municipal well field has been identified as downgradient, southwest, from the airport and that the NPI site investigation groundwater flow data supports that interpretation. The NPI data along with the anticipated groundwater flow direction created by the meander of the Chippewa River, also supports an interpreted radial groundwater flow direction, to the west and northwest of the site, towards the river. Therefore, initial downgradient soil borings and monitoring wells AMW-01 and AMW-02 were located along the west-central airport fence line to assist with determining groundwater flow direction and to identify groundwater impacts downgradient, to the west of the AFFF Testing AOC.

AFFF Testing AOC – The AFFF testing AOC is just north of the fuel farm area. A soil boring and monitoring well AMW-03 was located in the known AFFF testing area and used to determine PFAS impact to soil and groundwater.

Live Fire Training AOCs – Two Live Fire Training areas were identified on the airport property. Soil boring and monitoring well AMW-04 was located at Live Fire Training Area 1, at the South Hangar Ramp, to identify possible impacts from firefighting water discharges at this location.

Soil boring and monitoring well AMW-05 was located at Live Fire Training Area 2, at the Runway 32 Runup Pad, to identify possible impacts from firefighting water discharges and a possible AFFF discharge.

Aircraft Accident Site AOC – AFFF was discharged as a vapor suppression measure following a small plane accident just west of the Runway 14-32 and Runway 04-22 intersection. Soil from the area was excavated and transported for disposal. However, confirmation sampling for PFAS was not performed to determine if all the impacted soil was removed. Soil boring ASB-01 was located at the aircraft accident site to obtain a soil confirmation sample.

AFFF Storage: No investigation activities were conducted at the ARFF Fire Station and SRE maintenance building, the storage locations for AFFF, because no spills were reported at these locations and no spills or material mismanagement were observed during the October 21, 2021, site visit.

In summary, the following activities were completed during AECOM's site investigation:

- Review of historical environmental site reports and investigations
- A scoping review for emerging contaminants, as presented in the SI workplan
- Advancement of 1 hand auger and 6 hollow stem auger soil borings
- Collection and analysis of 10 soil samples for PFAS, Wisconsin 33 list
- Installation of 5 NR 141-compliant groundwater monitoring wells
- One round of groundwater sampling, including 2 NPI monitoring wells, for PFAS, Wisconsin 33 list
- Preparation of an NR 716 compliant site investigation report

2. Investigation Methods and Procedures

There are potential cross contamination issues associated with PFAS sampling due to the presence of these compounds in many commercial products. Therefore, AECOM PFAS-certified sampling teams conducted the PFAS sampling event. AECOM certification requires attending an internal PFAS sampling training course and reviewing the AECOM PFAS Sampling Guidance document designed to make AECOM samplers aware of the products known to have tested positive for PFAS compounds, as well as identifying PFAS-free products that are appropriate to use in the sampling environment.

2.1 Site Health and Safety Plan

AECOM prepared a site-specific health and safety plan (HASP) to cover field activities for AECOM staff in accordance with Occupational Safety and Health Administration (OSHA) and AECOM requirements prior to initiating investigation activities. Additionally, CVRA staff accompanied AECOM field staff during field work to provide compliance with on-site health and safety protocols as well as FAA requirements.

2.2 Utility Clearance

AECOM contacted Digger's Hotline for the location of public utilities in the area of the investigation prior to commencing work. Most of the on-site/airside utilities belonged to the airport. Therefore, a private utility locator and airport staff marked utilities prior to drilling. There were no conflicts with the boring location and utilities. Thus, the initial soil boring locations were consistent with the work plan.

2.3 Soil Borings

In preparation for drilling activities, AECOM reached out to the Village of Lake Hallie, located adjacent to and north of the airport property, to locate a source of PFAS free water for the drillers to use. Village of Lake Hallie Public Works Supervisor, Derek Schad, offered that Village Well #4 was in the neighborhood and provided AECOM with PFAS laboratory analytical results from Northern Lakes Service, Inc. (NLS) for Village Well #4 sampled on July 19, 2021. The results indicated Village Well #4 was PFAS free. Therefore, AECOM arranged to use water from Village Well #4 during drilling activities. A copy of the NLS laboratory report is provided in **Appendix A.**

A total of five (5) soil borings and one (1) hand auger boring were advanced on May 10, through 13, 2022. The boring locations are depicted on **Figure 2**.

The driller, Horizon, advance five (5) borings using a Geoprobe Model 7822DT tracked drill rig with hollow stem auger (HSA) for soil borings AMW-01 through AMW-05. A metal split-spoon sampler was used for the collection of soil samples. A single hand auger boring (ASB-01) was used to collect a soil sample at the Aircraft Accident Site AOC.

No soil sample was obtained from the initial and final AMW-02 locations due to difficult drilling conditions. The initial AMW-02 location encountered a perched aquifer in a sand and gravel seam, with possible cobbles, from approximately 20 to 30 feet (ft) below ground surface (bgs). Drilling penetrated the seam with difficulty and advanced to a total depth of 90 ft bgs. The deeper saturated zone was difficult to discern due to cascading water from the upper perched aquifer. No well was set due to flowable sands and the bore hole collapsing to a depth of 75 ft bgs, which was above the anticipated regional water table.

A second attempt was made to advance soil boring AMW-02 about 200 ft south of the original location. The perched aquifer in a sand and gravel seam, with possible cobbles, was again encountered at a depth of approximately 24 ft bgs. The driller was able to advance the bore hole to a depth of 34 ft with great difficulty, at which time AECOM decided to set a monitoring well at this depth in the perched aquifer.

Soil samples or cuttings were visually classified in general conformance with the unified soil classification system (USCS) and were described with respect to soil type, grain size distribution, color, odor, and moisture content. Field observations were recorded on Soil Boring Log Information form (WDNR Form 4400-122). Soil Boring Logs and Borehole Filling & Sealing Reports (WDNR Form 3300-005) for the hand auger and initial AMW-02 locations are presented in **Appendix B**.

2.4 Soil Sampling

A total of 10 soil samples were collected as follows:

- AMW-01: one sample from 80-85 ft bgs,
- AMW-03: four samples from 1-2 ft bgs, 35-37 ft bgs, 68-70 ft bgs and a duplicate sample at 68-70 ft bgs.
- AMW-04: two samples from 1-2 ft bgs and 69-70 ft bgs
- AMW-05: two samples from 1-2 ft bgs, 65-67 ft bgs
- ASB-01: one sample from 1-2 ft bgs

PFAS quality control samples were also obtained during drilling activities. This included a duplicate sample from AMW-03, three (3) driller's supply source water samples, one (1) aqueous field blank, and one (1) aqueous equipment blank.

The three driller's supply water samples (i.e., source water blanks) were obtained over the four days of drilling activities. The samples were collected in laboratory supplied containers and shipped to the laboratory with the field samples. The driller's water samples were originally described by AECOM as follows:

- "Decon Water (tap)" – sample collected on Wednesday May 11, 2022, from the driller's water storage poly-tank on the drill rig. The sample represents water brought to the site by the driller for use during the drilling equipment decon processes.
- "Decon Water (PFAS free)" – this sample was collected on Tuesday May 10, 2022, from the driller's garden sprayer tank. The driller reports that they filter municipal water at their home office with a Frizzlife, Inc. three stage 'under counter type' filter unit and store the water for use in battery powered garden style sprayers. The driller uses the filtered water for final rinse during decon processes.
- "Well #4" – sample collected on Thursday May 12, 2022, from the driller's water storage poly-tank after refilling the tank from the Village of Lake Hallie water source. **NOTE:** AECOM has annotated this sample name to read "Decon Water (Well #4)" on both the laboratory reports and data tables to clarify that the sample was not obtained directly from the Village of Lake Hallie's Municipal Well #4.

The field blank was collected on Friday May 13, 2022, while at a soil boring sampling location during the sampling event. The field blank was collected by pouring laboratory-certified PFAS-free water into a laboratory-provided sampling container and shipping the sample to the laboratory with the field samples.

The equipment blank representative of the sampling equipment was collected on Wednesday May 11, 2022. The equipment blank was collected by pouring laboratory-certified PFAS-free water through the deconned split spoon sampler and into a laboratory-provided sampling container. Then shipping the sample to the laboratory with the field samples.

Sampled materials for laboratory analysis were placed into sample containers provided by the laboratory and analyzed for PFAS; EPA Method 537 modified isotope dilution for the State of Wisconsin list of 33 analytes.

Laboratory samples were stored and shipped on-ice under chain of custody (COC) control. Samples were submitted to Vista Analytical Laboratory (Vista), a State of Wisconsin certified laboratory (Certification # 998036160) located in El Dorado Hills, California. Chain of custody forms and soil laboratory analytical reports are provided in **Appendix A**.

2.5 Monitoring Well Installation

Groundwater monitoring wells were installed at five locations (AMW-01 through AMW-05) in accordance with NR141 requirements (**Figure 2**). Well locations by AOC are as follows:

- Assumed Downgradient: AMW-01 and AMW-02
- AFFF Testing AOC: AMW-03
- Live Fire Training AOC Area #1: AMW-04
- Live Fire Training AOC Area #2: AMW-05

Monitoring wells were installed following completion of the soil borings using a track mounted rig (Geoprobe Model 7822DT) and HSA drilling techniques. The installed vertical location/depth of the monitoring well screens were determined based on soil moisture observations during drilling. The monitoring wells were constructed with 2-inch diameter polyvinyl chloride (PVC) riser pipes with 10 feet of 0.10-inch slot size PVC well screens. Monitoring well AMW-01 was set at 86 ft bgs, AMW-03 was set at 76-ft bgs, AMW-04 was set at 73.5 ft bgs, and AMW-05 was set at 72 ft bgs. Due to difficult drilling conditions, well AMW-02 as set at 32 ft bgs in the perched aquifer. All wells were completed with filter sand 1-foot above the screen, 1-foot of fine sand, and the remaining annular space as a bentonite seal to the ground surface. Monitoring wells were completed with flush-mount protective covers.

Monitoring wells were developed in accordance with NR141 requirements. Monitoring well construction (WDNR Form 4400-113A) and development forms (WDNR Form 4400-113B) are provided in **Appendix C**.

2.6 Groundwater Sampling

Following monitoring well installation and development, a single groundwater monitoring event was conducted on June 6th, 7th, and 8th, 2022.

Depths-to-groundwater were obtained on June 6, 2022, from a total of 11 monitoring wells including AMW-01 through AMW-05 and the existing NPI wells MW-49A through MW-55A. Measurements were made from the top of each well casing to the top of the groundwater surface using an electronic water level indicator (accuracy 0.01 foot) prior to purging the wells for sampling.

A total of seven monitoring wells were sampled, including AMW-01 through AMW-05 and the existing NPI wells MW-51A and MW-55A. The monitoring wells were purged and groundwater samples were collected utilizing low flow sampling techniques (submersible pump and dedicated polyethylene tubing) with the exception of well AMW-02, which was purged dry before sampling. Field observations and measurements for temperature, turbidity, specific conductivity, pH, dissolved oxygen (DO) and oxidation-reduction potential (ORP) were measured utilizing a flow through cell or in-well sensor to minimize sample contact with the atmosphere. Groundwater samples for laboratory analysis were placed in laboratory-supplied 250ml HDPE bottles without preservative as required by the analytical method.

Groundwater samples were analyzed for PFAS; EPA Method 537 modified isotope dilution for the State of Wisconsin list of 33 analytes.

PFAS groundwater quality control sampling included a duplicate sample along with field and equipment blanks. A field blank was collected adjacent to a sampling location during the sampling event. The field blank was collected by pouring laboratory-certified PFAS-free water into a laboratory-provided sampling container and shipping the sample to the laboratory with the field samples.

One equipment blank representative of the sampling equipment was collected. The equipment blank was collected by pumping laboratory-certified PFAS-free water through the low-flow sample tubing and into a laboratory-provided sampling container. Then shipping the sample to the laboratory with the field samples.

Laboratory samples were stored and shipped on-ice under COC control. Samples were submitted to Vista Analytical Laboratory (Vista), a State of Wisconsin certified laboratory (Certification # 998036160) located in El Dorado Hills, California.

Groundwater elevation data is presented in **Table 1**. Groundwater field sampling forms are provided in **Appendix D**. Chain of custody forms and groundwater laboratory analytical reports are provided in **Appendix A**.

2.7 Investigation Derived Wastes

Per the work plan submitted in November 2021, soil cuttings were thin spread at the locations of the individual soil borings or near AMW-03, the location where AFFF has historically been discharged. Groundwater from developing, purging, and sampling has been containerized, identified by well location, and stored at a secure location on the airport property. The drummed groundwater is to be picked up by Veolia in early January and disposed of by incineration.

2.8 Survey

AECOM surveyed the new monitoring well locations (Wisconsin State Plane NAD 83 datum) and top of casing (TOC) elevations (vertical datum NAVD88). AECOM also surveyed TOC elevations for select NPI on-airport property wells (i.e., MW-49A, 51A, 52A, 53A, 54A, and 55A).

3. Physical Settings and Receptors

3.1 Site Topography and Surface Water Hydrology

According to the United States Geological Survey (USGS) topographic map and FAA airfield information the airfield elevation is 913.1 ft above mean sea level (msl). The Site appears to be generally flat with slight up-slope towards the north, northwest.

The Chippewa River is the most significant topographical feature in the vicinity of the Site. The river flows generally from north to south in a meander such that it's located to the north, west, and southwest of the Site. As noted on the USGS topographic map, **Figure 1**, there is steep relief (approximately 70 to 100 ft) from the Site downward to the river elevation.

On the WDNR Surface Water Data Viewer[10], one unnamed stream (WBIC 5012006) is identified on the property traversing perpendicular to 4-22 runway then to the north towards the Village of Lake Hallie, Three Ponds Park, and the Chippewa River.

During the October 21, 2021, site visit AECOM noted several surface water and storm water drainage features on the property. Airport staff provided AECOM with Appendix C from the *Chippewa Valley Regional Airport Drainage Study*[11]. Appendix C of the Drainage Study is a comprehensive mapping assessment of the site subdivided into dozens of drainages. Two of the storm water drainage maps, as they relate to AFFF usage, are attached in **Appendix E**. They include:

[10] https://dnr.wisconsin.gov/topic/SurfaceWater/swdv
[11] *Chippewa Valley Regional Airport Drainage Study,* Mead & Hunt, Inc., 2012 updated in 2014

- *Routing Diagram for I and VII_2014_update*: This figure presents the surface water flow for Subwatersheds I and VII, which includes the Live Fire Training Areas, as follows:
  - Live Fire Training Area 1, the South Hangar Apron, Subwatershed I, is divided into two drainage areas:
    - Subwatershed I.17 includes the northern portion of the Apron, which sheet flow drains to the ground surface north of the Apron. Surface water then flows to Pond I.17p, an infiltration pond/ditch that also drains to Pond I20p, an infiltration pond with no outlet.
    - Subwatershed I.22 includes the southern portion of the Apron and it appears to collect water into storm sewer catch basins #157 and #158. The catch basins then drain to Pond I.20p, an infiltration pond with no outlet.
  - Live Fire Training Area 2, the Runway 32 Runup Pad, Subwatershed VII, appears to sheet flow drain to the ground surface east/northeast of the Runup Pad. Surface water then flows to Pond VII1p, an infiltration pond with no outlet.
- *Routing Diagram for V*: This figure presents the surface water flow for Subwatershed V, which includes the AFFF Testing Area, specifically noted as Subwatershed V.1. The surface water from the AFFF Testing Area appears to flow to pond V.1p, an infiltration pond with no outlet.

3.2 Geological Setting

According to the USDA Web Soil Survey database[12] the site is predominantly underlain with Menahga loamy sand. Menahga is an outwash plain sandy loam described as coarse grained with high infiltration rates and adequately drained. These soils are classified as nonhydric (no potential to support wetlands). The site is in the Northern Central Hardwood Forests Central Wisconsin Undulating Till Plain Ecoregion (Level III and IV Ecoregions of Wisconsin - WDNR/EPA). The undulating to rolling irregular plains of sandy loam till and outwash sands also distinguish this ecoregion from the stagnation moraines of ecoregion to the west and the lacustrine sand plains of ecoregion to the south.

A review of the Bedrock Geologic Map of Wisconsin[13], shows that the bedrock in the area consists of Cambrian aged Sandstone with dome dolomite and shale, undivided. The Sandstone consists of Trempealeau, Tunnel City, and Elk Mound Formations. The depth to bedrock at the Site is estimated to be 100 ft or greater.

AECOM researched and obtained a copy of the City of Eau Claire *Wellhead Protection Plan – 2020 Update* report[14]. The report provides a summary of the area geology indicating that the well field draws its water from an alluvial sand and gravel aquifer, approximately 100 ft deep, overlaying a granitic bedrock. Figure 2 *Wellhead Protection Area (WHPA)* from the report identifies a buried bedrock valley that runs from the northeast, then turns westward under the airport property, before turning south/southwest to the municipal well field. A copy of Figure 2 is provided in **Appendix E**.

AECOM also researched Gannett Fleming's *Annual Interim Remedial Action Status Report for 2020 Report*[15] for the NPI site. The report summarizes geologic and groundwater flow in the area. From the *Site Description, Hydrogeological Setting, and Conceptual Site Model* section of the report:

> Extending northward from the northwestern portion of the site (AECOM editor's note: the NPI site) to Lake Hallie and westerly from the site to the Chippewa River are buried pre-glacial valleys within which alluvial sand and gravel deposits serve as a primary drinking water aquifer in the Eau Claire area. Approximately 2 miles west of the NPI site, for example, the ECMWF (AECOM editor's note: Eau Claire Municipal Well Field) draws groundwater from more of these buried deposits and provides drinking water for the City of Eau Claire. The direction of groundwater flow is controlled by the sandstone and granite bedrock valleys beneath

[12] https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm
[13] *Bedrock Geologic Map of Wisconsin*, Wisconsin Geological and Natural History Survey, Mudrey, Brown, and Greenberg, 1982; Sims, 1992
[14] *Wellhead Protection Plan – 2020 UPDATE*, Municipal Well Field, City of Eau Claire, Short Elliott Hendrickson, Inc., September 3, 2020
[15] *Annual Interim Remedial Action Status Report for 2020*, National Presto Industries, Inc., Eau Claire, Wisconsin, Gannett Fleming, Inc., March 2021

> the sand and gravel, which carry groundwater to the northwest towards Lake Hallie and to the west towards the Chippewa River and the ECMWF.

In summary, the area wide geologic setting appears to be buried pre-glacial sandstone and granite bedrock valleys below glacial sand and gravel outwash deposits.

3.3 Hydrogeology

Area wide groundwater flows are anticipated to be influenced by the Chippewa River and groundwater extraction activities at the City of Eau Claire Municipal Well Field located at 2711 Riverview Drive.

NPI Site Data: As noted in Gannett Fleming's *Annual Interim Remedial Action Status Report for 2020 Report:*

> The direction of groundwater flow is controlled by the sandstone and granite bedrock valleys beneath the sand and gravel, which carry groundwater to the northwest towards Lake Hallie and to the west towards the Chippewa River and the ECMWF.

Figure 1, *Water Table Groundwater Contour Map (June 2020) With 1993 Plume Locations*, from Gannett Fleming's 2020 report presents an interpreted groundwater flow map (**Appendix E)**. The map shows groundwater flow under the airport property. Groundwater from the NPI site, located to the east of the airport, flows westward towards the airport property, then, under the airport, the flow bends southwesterly towards the municipal well field.

Wellhead Protection Data: The following groundwater/hydrology information is summarized from the City of Eau Claire *Wellhead Protection Plan – 2020 Update* report. The City of Eau Claire obtains its drinking water from 17 wells located along the Chippewa River. The well field is approximately 400 acres in size located adjacent, southwest, to the airport property. The well field draws its water from an alluvial sand and gravel aquifer, approximately 100 feet deep, overlaying a granitic bedrock.

The report notes that groundwater flow direction is generally from east to west from areas of higher topography, corresponding to the presence of sandstone bedrock, towards the Chippewa River. A groundwater flow figure, "Groundwater flow at well field" from Page 3 of the report, indicates radial groundwater flow across the airport property, i.e., radially north, west, and southwest towards the Chippewa River and the municipal well field.

The zone of influence (ZOI) and the recharge area for the well field are identified in the report. The ZOI was delineated at 13,200 ft from the well field. The ZOI is defined by a 30-day pumping period for all wells within the well field with a 1 ft drawdown at the limits of the ZOI. The recharge area for the well field, assuming a 5-year groundwater travel time, was found to be approximately 5,600 feet from the well field.

In summary, the report identifies the wellhead protection area for the municipal well field to include the recharge area equivalent to a groundwater 5-year time of travel which includes the area within the buried bedrock valley containing sand and gravel deposits that transmit water to the City of Eau Claire wells.

Based on the parameters presented in the Wellhead Protection Plan, most of the airport property is contained within the wellhead protection area for the municipal well field.

3.4 Potential Receptors

Archeological: A review of available digital records was completed for the Site. The 2003 City of Eau Claire Historic Resource Analyses Report, the 1984 National Register of Historic Places Inventory Nomination Form for various locations in the City of Eau Claire, and the 2015 City of Eau Claire Comprehensive Plan were reviewed. Based on the results of the review and the history of development at the Site, there appears to be no archeological concerns for the property.

Sensitive Species, Habitats, and Ecosystems: A review of the U.S. Fish and Wildlife Service Information for Planning and Consultation (IPaC) database[16] was executed for the Site. Four (4) species that are listed under the Endangered Species Act (1973) could potentially be affected at this location. The species that were listed are the threatened Northern Long-eared Bat (*Myotis septentrionalis*), the endangered Sheepnose Mussel (*Plethobasus cyphyus*), the endangered Karner Blue Butterfly (*Lycaeides melissa samuelis*), and the candidate Monarch Butterfly (*Danaus*

[16] https://ipac.ecosphere.fws.gov/

plexippus). Fourteen (14) species that are listed under the Migratory Bird Treaty Act (1918) or the Bald and Golden Eagle Protection Act (1940) could potentially be affected at this location. The species that were listed are the Bald Eagle (*Haliaeetus leucocephalus*), the Black Tern (*Chlidonias* niger). the Black-billed Cuckoo (*Coccyzus erythropthalmus*), the Bobolink (*Dolichonyx oryzivorus*), the Canada Warbler (*Cardellina canadensis*), the Eastern Whip-poor-will (*Antrostomus vociferus*), the Golden Eagle (*Aquila chrysaetos*), the Golden-winged Warbler (*Vermivora chrysoptera*), Lesser Yellowlegs (*Tringa flavipes*), the Marbled Godwit (*Limosa fedoa*), the Red-headed Woodpecker (*Melanerpes erythrocephalus)*, the Rusty Blackbird (*Euphagus carolinus*), the Short-billed Dowitcher (*Limnodromus griseus*), and the Wood Thrush (*Hylocichla mustelina*).

Several factors indicate that it is unlikely that any of the listed species will be encountered at the Site. Due to the development of the Site, it is listed as a non-critical habitat for all of the listed species.

Surface Waters: As noted above, on the WDNR Surface Water Data Viewer, one unnamed stream (WBIC 5012006) is identified on the property traversing perpendicular to 4-22 runway then to the north towards the Village of Lake Hallie, Three Ponds Park, and the Chippewa River.

The Chippewa River traverses generally northeast to southwest near the western border of the property, approximately 1,000 feet west of runway 14-32.

Municipal Potable Wells: The City of Eau Claire municipal well field is downgradient from, adjacent to the southwest, and within 1,200 feet of the airport property. There are reportedly 17 potable wells in the well field. The Village of Lake Hallie municipal wells are upgradient and are greater than 1,200 ft from the airport property.

Municipal Water Mains & Service: The City of Eau Claire provides municipal water to those addresses located within city limits, which includes a few properties to the north and the surrounding properties southwest, south, and southeast of the airport.

The Village of Lake Hallie provides municipal water to a limited number of homeowners in that portion of the village located to the northwest, north, and northeast of the airport. The areas and homeowners served by the village water main, that are adjacent to the airport, are described as follows[17]:

- The Hunter Ridge Subdivision, specifically east of the intersection of 24th Avenue and 105th Street, is served by municipal water.
- Starting at the intersection of 24th Avenue and 105th Street and continuing north along 105th Street and west along 26th Avenue to the Village's Three Ponds Park, then south and west through the park to the Hallie Ridge Subdivision. This length of water main is a "transmission only water main" with no extended mains or individual laterals serving homeowners. Connection to this length of water main is restricted due to the style of its construction and WDNR regulation.
- Once the water main reaches Hallie Ridge Subdivision (i.e., streets including 23rd Ave, 24th Ave, 24th Ave South, 92nd Street, and 94th Street) the water main serves all homeowners that build in the subdivision.

Mapping of the municipal water mains is presented on **Figure 3**.

Private Potable Wells: CVRA staff report that there are no potable water supply wells located on the property. Additionally, AECOM searched the WDNR's *Well Driller Viewer*[18] and the *Well Construction Information (Well Records)*[19] databases. No potable well records that appear to be associated with the airport property were identified in either database.

AECOM did identify one abandoned well record associated with the airport on the *Well Filling & Sealing Reports* database[20]. On June 16, 2003, a single well, noted as a "monitoring well" (Well ID. 014871) was abandoned by filling. The well location was only given as the Chippewa Valley Regional Airport at 3800 Starr Ave. The well was abandoned by Ken Olson Well Drilling, Inc. and the reason for abandonment was given as "no longer in use". This record does not appear to correspond to the abandonment of a potable well.

[17] Personal communication, Village of Lake Hallie, Public Works Supervisor Derrick Shad, December 20, 2022
[18] https://dnrmaps.wi.gov/H5/?viewer=Well_Driller_Viewer
[19] https://dnr.wisconsin.gov/topic/Groundwater/Data.html#wellreports
[20] https://dnr.wi.gov/warsreport/report

Private potable wells do exist within 1,200 feet of the airport property, within the Village of Lake Hallie, to the northwest, north, and northeast of the airport. There are approximately 60 Village of Lake Hallie address locations in the Chippewa County geographic information system (GIS) database[21] that are within 1,200 feet of the airport property and that do not appear to be served by municipal water.

A preliminary review of the WDNR potable well databases identify eight private potable wells within 1,200 ft of the airport property. AECOM assumes that all Village of Lake Hallie address locations not served by municipal water will have private potable wells, which means there may be approximately 60 private potable wells that are both within the Village of Lake Hallie and within 1,200 feet of the Site (**Figure 3)**.

Commercial Receptors: No sensitive commercial receptors (i.e., day care centers, schools, hospitals) were identified adjacent to the Site.

Utilities: The Site is served by water, sanitary, and storm sewer utilities. Most of the utilities are connected through the Starr Avenue utility corridor.

4. Soil Results

4.1 Stratigraphy

AECOM's site investigation soil borings were advanced to a maximum of 90 ft bgs. Soils at the site were typically categorized as poorly graded sands with gravel (SP) and/or silty sands with gravel (SM) to the depth of the investigated interval. These soils are typical of glacial outwash/lacustrine deposits.

The exception to this typical stratigraphy was the sand and gravel (GP) seam, with possible cobbles, identified in the initial and final soil borings for AMW-02. This layer was present from approximately 20 to 40 feet bgs. In discussion with the CVRA Airport Engineer, Amy Michels with Mead & Hunt, Inc., AECOM learned that the sand/gravel/cobble layer has been encountered in other areas on the airport property, but it has not been delineated.

Due to the large size of the airport property and the minimal number of soil boring advanced to-date, no NR 716 required soil stratigraphy cross-sections have been produced. AECOM anticipates preparing the required cross-sections once more soil borings are completed. Soil boring logs (WDNR Form 4400-122) are provided in **Appendix B**.

4.2 Regulatory Standards

Soil laboratory analytical results are compared to the WDNR Residual Contaminant Level (RCL) Calculator (PUB-RR-890). Currently there are only standards established for Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS) and Perfluorobutanesulfonic acid (PFBS). These standards are based on the U.S. EPA's regional screening level (RSL) web calculator. These results include direct contact standards for industrial and non-industrial sites. Currently there are no listed soil to groundwater protection RCL standards.

4.3 Analytical Results

Soil laboratory analytical results are provided in **Table 2** and presented on **Figure 5.** The laboratory analytical reports are provided in **Appendix A.**

Soil Laboratory analytical results are as follows:

AMW-01, Downgradient Monitoring Location:

- 80 to 80.5 ft bgs sample depth: PFAS analytical results were less than individual MDLs.

Soil analytical results from the AMW-01 soil boring location indicate PFAS is not present at or near the water table smear zone elevation at concentrations above individual MDLs.

AMW-03, AFFF Testing AOC:

[21] https://www.co.chippewa.wi.us/government/land-records-county-surveyor/mapping-gis

- 1 to 2 ft bgs sample depth: Seven PFAS were detected; PFOA, PFNA, PFDA, PFOS, 6:2 FTS, 8:2 FTS and NEtFOSA. The PFOA and PFOS detections were below non-industrial direct contact RCLs. There are no RCL standards established for PFNA, PFDA, 6:2 FTS, 8:2 FTS and NEtFOSA. The remainder of the PFAS analytical results were less than their MDLs.
- 35 to 37 ft bgs sample depth: Two PFAS compounds were detected: PFHxS and PFOS. The PFOS detection was below its non-industrial direct contact RCL. There is no RCL standard established for PFHxS. The remainder of the PFAS analytical results were less than their MDLs.
- 68 to 70 ft bgs sample depth: Two PFAS compounds were detected, PFHxS and 6:2 FTS. There is no RCL standards established for PFHxS or 6:2 FTS. The remainder of the PFAS analytical results were less than their MDLs.

Soil analytical results from the AMW-03 soil boring location indicate that AFFF Testing activities at this location are a source for PFAS.

AMW-04, Live Fire Training AOC Area #1:

- 1 to 2 ft bgs sample depth: PFAS analytical results were less than individual MDLs.
- 69 to 70 ft bgs sample depth: PFAS analytical results were less than individual MDLs.

Soil analytical results from the AMW-04 soil boring location indicate that Live Fire Training activities at this location are not a source for PFAS.

AMW-05, Live Fire Training AOC Area #2:

- 1 to 2 ft bgs sample depth: One PFAS was detected, PFOS, at a concentration below its non-industrial direct contact RCL. The remainder of the PFAS analytical results were less than individual MDLs.
- 65 to 67 ft bgs sample depth: One PFAS was detected, PFOS, at a concentration below its non-industrial direct contact RCL. The remainder of the PFAS analytical results were less than their individual MDLs.

Soil analytical results from the AMW-05 soil boring location indicate that Live Fire Training activities or the suspected release of AFFF at this location are a source for PFAS.

ASB-01, Aircraft Accident Site AOC:

- 1 to 2 ft sample depth: PFAS analytical results were less than individual MDLs.

Soil analytical results from the ASB-01 hand auger location, as a confirmation soil sample, indicate that initial excavation activities to removed soil impacted by a AFFF discharged for fuel vapor suppression during an aircraft accident at this location was successful in removing PFAS as a source.

Soil Analytical Summary: Soil analytical results indicate that:

- The AFFF Testing AOC (AMW-03) and the Live Fire Training AOC Area #2 (AMW-05) are both source areas for PFAS.
- The Aircraft Accident Site AOC (ASB-01) post-accident soil excavation activity was successful in removing PFAS impacts.
- The Downgradient Monitoring Location (AMW-01) and the Live Fire Training AOC Area #1 (AMW-04) are not a source for PFAS.

4.4 Quality Control Samples

Quality control samples obtained during drilling activities included a duplicate sample, three (3) driller's supply source water samples, one (1) aqueous field blank, and one (1) aqueous equipment blank.

Duplicate: Analytical results from the original sample (AMW-03, 68'-70') and the duplicate sample show similar compounds present at approximately the same concentrations. Therefore, the duplicate sample confirms the validity of the original analytical result.

Source Water Blanks: The three driller's supply water samples (i.e., source water blanks) were obtained over the four days of drilling activities, as follows:

- "Decon Water (tap)" – sample collected on Wednesday May 11, 2022, from the driller's water storage poly-tank on the drill rig. The sample represents water brought to the site by the driller for use during the drilling equipment decon processes.

  This sample had a detect of PFOSA at 16.1 ng/l. This indicates that the driller's equipment (i.e., the poly water tank) or the original source of the water in the poly-tank was the source of the PFOSA detect.

- "Decon Water (PFAS free)" – this sample was collected on Tuesday May 10, 2022, from the driller's garden sprayer tank. The driller reports that they filter municipal water at their home office with a Frizzlife, Inc. three stage 'under counter type' filter unit and store the water for use in battery powered garden style sprayers. The driller uses the filtered water for final rinse during decon processes.

  This sample had a detect of PFOSA at 1.37J ng/l. This indicates that the driller's filtering equipment is not removing all PFAS from the original source water or the driller's equipment, the powered sprayer, is a source of PFAS.

- "Well #4" – sample collected on Thursday May 12, 2022, from the driller's water storage poly-tank after refilling the tank from the Village of Lake Hallie water source. **NOTE:** AECOM has annotated this sample name to read "Decon Water (Well #4)" on both the laboratory reports and data tables to clarify that the sample was not obtained directly from the Village of Lake Hallie's Municipal Well #4.

  This sample had a detect of PFOSA at 4.87J+ ng/l. This indicates that the driller's equipment (i.e., the poly water tank) or the source of the water in the poly-tank was the source of the PFOSA detect.

  Prior to drilling activities, AECOM received a laboratory analytical report from the Village of Lake Hallie indicating that the Municipal Well #4 had been tested and found to not contain PFAS above individual laboratory MDLs. Therefore, AECOM suspects that the driller's equipment (i.e., the poly water tank) or the original source water the driller brought to the site in the poly-tank is the source for the detected PFAS. The mixing/dilution of original source water in the poly-tank by the addition of water from the Village of Lake Hallie municipal water supply may account for the lower PFOSA concentration detect in this sample (4.87J+ ng/l) when compared to the original "Decon Water (tap)" sample results (16.1 ng/l).

In summary, while analytical results from the source water blanks indicate the presence of PFOSA, this cross-contamination issue is not anticipated to affect the interpretation of the soil analytical results because PFOSA was not detected in the soil samples above its MDL.

Field Blank: The field blank was collected on Friday May 13, 2022, while at a soil boring sampling location during the sampling event. The field blank analytical result showed no PFAS present above individual MDLs, indicating that there was no cross contamination from ambient conditions at the site.

Equipment Blank: The equipment blank representative of the sampling equipment was collected on Wednesday May 11, 2022. The equipment blank was collected by pouring laboratory-certified PFAS-free water through the deconned split spoon sampler and into a laboratory-provided sampling container.

Laboratory analytical results indicate PFOSA was present in the equipment blank sample at a concentration of 1.64J ng/L. This is a similar concentration of PFOSA (1.37J ng/l) found in the "Decon Water (PFAS free)" source water blank for water used during the final decontamination rinse of the drilling equipment. AECOM suspects the "Decon Water (PFAS free)" water is the source for the PFOSA detected in the equipment blank. Because PFOSA was not detected in the soil analytical results above its MDL, the detection of PFOSA in the equipment blank is not expected to influence the interpretation of the PFAS soil results.

Soil sampling quality control results are presented in **Table 2** and the laboratory analytical reports are presented in **Appendix A**.

Data Validation

Data validation of the PFAS laboratory results were conducted with reference to:

- Wisconsin DNR PFAS Updates, March 1, 2021

- Wisconsin PFAS Aqueous (Non-Potable Water) and Non-Aqueous Matrices Method Expectations, EA-19-0001-C, 12/19/2019.
- Data Validation Guidelines Module3: Data Validation Procedure for Per- and Polyfluoroalkyl Substances Analysis by QSM Table B-15, Department of Defense, 5/1/2020.

Based on the data validation review, the PFAS results are acceptable for use as qualified. The validation report is included in **Appendix A** and provides a detailed quality control review of the analytical results.

5. Groundwater Results

5.1 Groundwater Flow

The local groundwater flow direction was determined by groundwater elevation measurements obtained from a total of 11 on-site monitoring wells including AMW-01 through AMW-05 and the existing NPI wells MW-49A through MW-55A.

Based on groundwater elevation measurements collected during the June 2022 sampling event, groundwater was observed in the monitoring wells, excluding AMW-02, at depths ranging from approximately 65 ft to 81 ft bgs with groundwater elevations ranging from 821.46 ft MSL at AMW-03 to 800.36 ft MSL at MW-55A. Groundwater elevations, not including well AMW-02, indicate an interpreted groundwater flow direction to the west, towards the Chippewa River.

The average horizontal hydraulic gradient calculated from the June 2022 groundwater elevation data is 0.0059 ft/ft.

Groundwater elevation data are presented on **Table 1**. A groundwater contour map from the June 2022 elevation data is included as **Figure 4**. Calculation for the horizontal hydraulic gradient is presented in **Appendix F.**

5.1 Regulatory Standards

The State of Wisconsin does not currently have promulgated groundwater standards for PFAS. Groundwater analytical results for PFAS are compared to the Wisconsin Department of Health Services (WDHS) Cycle 10 and Cycle 11 recommendations. Currently there are individual groundwater standard recommendations for seventeen (17) PFAS and one combined standard for six (6) compounds. These recommendations include proposed preventative action limits (PALs) and proposed enforcement standards (ESs).

At this phase of the site investigation, AECOM has not calculated WDHS recommended Hazard Index (HI) values for those PFAS detects that have proposed ESs. This is because PFAS impacts are largely documented in the City of Eau Claire well field to the southwest of the site and the extent of impacts to the west, north, and east of the site are still to be determined. CVRA and AECOM will review HI values once we have delineated PFAS groundwater impacts along the airport property boundary to the west, north, and east.

5.2 Analytical Results

Groundwater laboratory analytical results are provided in **Table 3** and presented on **Figure 6.** The laboratory analytical reports are provided in **Appendix A.**

Groundwater analytical results are as follows:

AMW-01, Downgradient Monitoring Location: Ten PFAS were detected. PFHxS and PFOS exceeded their individual proposed PALs. The combined 6 compounds standard also exceeded the proposed PAL.

Groundwater analytical results indicates that there is PFAS groundwater contamination downgradient, to the west, of the AFFF Testing AOC source area.

AMW-02, Downgradient Monitoring Location (perched aquifer): Four PFAS were detected. PFOS, PFOSA, and the Combined 6 standard exceeded the proposed PALs.

Groundwater analytical results indicate that there is PFAS groundwater contamination in the shallow/perched aquifer downgradient, to the west/northwest, of the AFFF Testing AOC source area.

AMW-03, AFFF Testing AOC: Fourteen PFAS were detected. PFOA, PFHxS, PFOS, and the Combined 6 exceeded their individual and the combined proposed ESs. PFNA exceeded its proposed PAL. The remainder of the detections were below proposed regulatory standards or standards are not established.

The large groundwater contaminant concentrations present indicate that the AFFF Testing AOC is a source area.

AMW-04, Live Fire Training AOC Area #1: Twelve PFAS were detected. PFHxS, PFOS, and the Combined 6 exceeded their proposed ESs. PFOA exceeded its proposed PAL.

The lower PFAS groundwater contaminant concentrations (relative to the other identified soil source areas) and the lack of soil PFAS detects suggest that the Live Fire Training AOC Area #1 is not a source area.

Groundwater contamination at the Live Fire Training AOC Area #1 location is probably due to impacts from the Live Fire Training AOC Area #2, an identified soil source area located up-gradient, to the east.

AMW-05, Live Fire Training AOC Area #2: Twelve PFAS were detected. PFOA, PFHxS, PFOS, PFOSA and the Combined 6 exceeded their proposed ESs. PFNA exceeded its proposed PAL.

Groundwater analytical results show that large contaminant concentrations are present indicating that the Live Fire Training AOC Area #2 is a source area.

MW-51A, NPI Mid-field Monitoring Well: Ten PFAS were detected. PFOA, PFHxS, PFOS, PFOSA, and the Combined 6 Standard exceeded their proposed PALs.

Groundwater analytical results from the MW-51A location indicates that there is PFAS groundwater contamination down/side gradient, to the southwest, of the AFFF Testing AOC source area.

MW-55A, NPI Mid-field Monitoring Well: Nine PFAS were detected. PFHxS, PFOS, PFOSA and the Combined 6 Standard exceeded the proposed PALs.

Groundwater analytical results from the MW-55A location indicates that there is PFAS groundwater contamination down/side gradient, to the southwest of the AFFF Testing AOC and northwest of the Live Fire Training AOC Area #2 source areas.

Groundwater Analytical Summary: Groundwater analytical results indicate:

- Groundwater results confirm that both the AFFF Testing AOC (AMW-03) and the Live Fire Training AOC Area #2 (AMW-05) are PFAS source areas.
- Downgradient Monitoring along the west central fence line (AMW-01 and AMW-02) have PFAS impacts above PALs.
- That the Live Fire Training AOC Area #1 (AMW-04) and the NPI Mid-field Monitoring Wells (MW-51A and MS-55A) have PAL exceedances, possibly indicating a comingled plume from the AFFF Testing and the Live Fire Training Area #2 AOC source areas.

5.3 Quality Control Samples

Quality control samples obtained during groundwater sampling activities included a duplicate sample, one (1) aqueous field blank, and one (1) aqueous equipment blank.

Duplicate: Analytical results from the original sample (MW-51A) and the duplicate sample show similar compounds present at approximately the same concentrations. Therefore, the duplicate sample confirms the validity of the original analytical result.

Field Blank: The field blank was collected while at a groundwater sampling location during the sampling event. The field blank analytical result showed no PFAS present above individual MDLs, indicating that there was no cross contamination from ambient conditions at the site.

Equipment Blank: The equipment blank representative of the sampling equipment was collected on Wednesday May 11, 2022. The equipment blank analytical result showed no PFAS present above individual MDLs, indicating that there was no cross contamination from sampling equipment and equipment decontamination procedures.

Groundwater sampling quality control results are provided in **Table 3** and the laboratory analytical reports are presented in **Appendix A**.

Data Validation

Data validation of the PFAS laboratory results were conducted with reference to:

- Wisconsin DNR PFAS Updates, March 1, 2021
- Wisconsin PFAS Aqueous (Non-Potable Water) and Non-Aqueous Matrices Method Expectations, EA-19-0001-C, 12/19/2019.
- Data Validation Guidelines Module3: Data Validation Procedure for Per- and Polyfluoroalkyl Substances Analysis by QSM Table B-15, Department of Defense, 5/1/2020.

Based on the data validation review, the PFAS results are acceptable for use as qualified. The validation report is included in **Appendix A** and provides a detailed quality control review of the analytical results.

6. Data Gaps & Recommendations

Initial SI activities were scoped as the first phase of multiple phases necessary to complete an NR 716 compliant site investigation. With that in-mind, AECOM has identified the following data gaps and recommendations based on the results of the initial investigation:

Data Gap #1, Horizontal Delineation of Soil Impacts, AFFF Testing AOC: AECOM recommends advancing hand-auger soil borings to delineate the horizontal extent of PFAS soil impacts at the AFFF Testing AOC.

Data Gap #2, Horizontal Delineation of Soil Impacts, Live Fire Training AOC Area #2: AECOM recommends advancing hand-auger soil borings to delineate the horizontal extent of PFAS soil impacts at the Live Fire Training AOC Area #2.

Data Gap #3, Horizontal Delineation of Groundwater Impacts: Groundwater impacts from the two identified source areas (i.e., AFFF Testing AOC and the Live Fire Training AOC Area #2) appear to be comingled into one groundwater plume. The next phase of groundwater investigation activities will work to delineate the plume.

AECOM anticipates that this will include a significant effort to inventory and confirm the presence of existing third-party monitoring wells (i.e., NPI, WDNR, and City of Eau Claire monitoring wells) in the vicinity of the airport. A selection of the viable existing wells, in concert with new monitoring wells installed on airport property, will form the monitoring network for the next phase of groundwater monitoring activities.

The preliminary scope of work for the next phase of the groundwater investigation, described by cardinal compass direction, includes the following:

- West, install wells on airport property.
- Northwest, install wells on airport property.
- Northeast, install wells on airport property and monitor third-party wells off-site.
- East, monitor third-party wells off-site.
- Southeast, install wells on airport property.
- South, monitor third-party wells on-site.
- Southwest, monitor third-party wells on-site or off-site.

CVRA and AECOM will provide the Department with a Supplemental Site Investigation Work Plan presenting the details of the supplemental investigation. AECOM anticipates including the NR 716 required soil stratigraphy cross-sections with the Supplemental Site Investigation Report.

7. Statement of Limitations

AECOM's objective is to complete our work with care, exercising the customary thoroughness and competence of consulting professionals in the relevant disciplines, in accordance with the standards for professional services existing at the time and location those services are rendered. It is important to recognize that even the most comprehensive scope of services may fail to detect environmental liability on a particular site. Therefore, AECOM cannot act as insurers and cannot "certify" that a site is free of environmental contamination, and no expressed or implied representation or warranty is included or intended in our reports except that our work was performed within the limits prescribed by our proposal and with the customary thoroughness and competence of our profession.

Tables

AECOM

Table 1
Groundwater Elevations
Chippewa Valley Regional Airport
Eau Claire, Wisconsin

Location	Date	Ground Elevation	Depth to Bottom from TOC	TOC Elevation	Depth to Water from TOC	Water Elevations
MW-49A	6/7/2022	883.28	91.29	882.99	80.29	802.70
MW-51A	6/7/2022	883.79	78.16	883.87	68.66	815.21
MW-52A	6/7/2022	884.12	62.24	883.93	71.26	812.67
MW-53A	6/7/2022	888.16	90.93	887.75	80.40	807.35
MW-54A	6/7/2022	882.73	90.58	882.50	79.49	803.01
MW-55A	6/7/2022	881.99	92.58	881.55	81.19	800.36
AMW-01	6/7/2022	890.20	85.10	890.88	79.95	810.93
AMW-02	6/7/2022	890.11	33.10	890.31	31.41	858.90
AMW-03	6/7/2022	887.52	75.73	888.18	66.72	821.46
AMW-04	6/7/2022	884.02	73.06	883.68	68.84	814.84
AMW-05	6/7/2022	883.68	71.82	883.94	65.72	818.22

Notes:

- TOC = Top of Casing
- fbgs = feet below ground surface
- USGS datum NAVD 88
- Depth to water and depth to bottom measurements taken from north side of the TOC

Table 2
Soil Analytical Results
Chippewa Valley Regional Airport
Eau Claire, Wisconsin

AECOM

		Location:		NR 720 Residual Contaminant Levels		AMW-01	AMW-03			AMW-03 DUP	AMW-04		AMW-05		ASB-01	Decon Water	Decon Water	Decon Water	Equipment Blank	Field Blank
		Sample Interval (ft bgs):		Non-Industrial Direct Contact	Industrial Direct Contact	80'-80.5'	1'-2'	35'-37'	68'-70'	68'-70'	1'-2'	69'-70'	1'-2'	65'-67'	1'-2'	Well #4	PFAS Free	Tap	EB	FB
		Sample Date:																		
Abbr	Analyte	Cas Number	Units			5/9/2022	5/13/2022	5/13/2022	5/13/2022	5/13/2022	5/11/2022	5/11/2022	5/12/2022	5/12/2022	5/12/2022	5/12/2022	5/10/2022	5/11/2022	5/12/2022	5/13/2022
Carboxylic Acids:																				
PFBA	Perfluorobutanoic acid	375-22-4	ng/g	--	--	< 0.458	< 0.456	< 0.442	< 0.447	< 0.439	< 0.45	< 0.449	< 0.44	< 0.455	< 0.455	< 1.00	< 0.997	< 1.01	< 0.977	< 0.964
PFPeA	Perfluoropentanoic acid	2706-90-3	ng/g	--	--	< 0.366	< 0.365	< 0.354	< 0.357	< 0.351	< 0.36	< 0.359	< 0.352	< 0.364	< 0.364	< 0.749	< 0.745	< 0.756	< 0.731	< 0.720
PFHxA	Perfluorohexanoic acid	307-24-4	ng/g	--	--	< 0.318	< 0.317	< 0.308	< 0.311	< 0.305	< 0.313	< 0.313	< 0.306	< 0.316	< 0.317	< 0.809	< 0.805	< 0.816	< 0.789	< 0.778
PFHpA	Perfluoroheptanoic acid	375-85-9	ng/g	--	--	< 0.484	< 0.482	< 0.467	< 0.472	< 0.463	< 0.476	< 0.475	< 0.464	< 0.481	< 0.481	< 0.928	< 0.923	< 0.936	< 0.905	< 0.892
PFOA	Perfluorooctanoic acid	335-67-1	ng/g	1,260	16,400	< 0.269	0.391 J	< 0.26	< 0.262	< 0.257	< 0.264	< 0.264	< 0.258	< 0.267	< 0.267	< 0.948	< 0.943	< 0.956	< 0.924	< 0.911
PFNA	Perfluorononaoic acid	375-95-1	ng/g	--	--	< 0.37	1.78	< 0.358	< 0.361	< 0.355	< 0.364	< 0.363	< 0.356	< 0.368	< 0.368	< 0.749	< 0.745	< 0.756	< 0.731	< 0.720
PFDA	Perfluorodecanoic acid	335-76-2	ng/g	--	--	< 0.44	1.37	< 0.425	< 0.429	< 0.421	< 0.433	< 0.432	< 0.422	< 0.437	< 0.437	< 0.938	< 0.933	< 0.946	< 0.914	< 0.902
PFUnA	Perfluoroundecanoic acid	2058-94-8	ng/g	--	--	< 0.504	< 0.502	< 0.487	< 0.491	< 0.482	< 0.495	< 0.494	< 0.484	< 0.5	< 0.501	< 0.749	< 0.745	< 0.756	< 0.731	< 0.720
PFDoA	Perfluorododecanoic acid	307-55-1	ng/g	--	--	< 0.454	< 0.452	< 0.438	< 0.443	< 0.435	< 0.446	< 0.445	< 0.436	< 0.451	< 0.451	< 0.968	< 0.963	< 0.976	< 0.943	< 0.930
PFTrDA	Perfluorotridecanoic acid	72629-94-8	ng/g	--	--	< 0.404	< 0.403	< 0.39	< 0.394	< 0.387	< 0.397	< 0.397	< 0.388	< 0.401	< 0.402	< 0.650	< 0.647	< 0.656	< 0.634	< 0.625
PFTeDA	Perfluorotetradecanoic acid	376-06-7	ng/g	--	--	< 0.426	< 0.425	< 0.412	< 0.416	< 0.408	< 0.419	< 0.418	< 0.409	< 0.423	< 0.424	< 0.809	< 0.805	< 0.816	< 0.789	< 0.778
Sulfonic Acids:																				
PFBS	Perfluorobutanesulfonic acid	375-73-5	ng/g	1,260,000	########	< 0.305	< 0.304	< 0.294	< 0.297	< 0.292	< 0.3	< 0.299	< 0.292	< 0.303	< 0.303	< 0.898	< 0.894	< 0.906	< 0.876	< 0.863
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4	ng/g	--	--	< 0.299	< 0.298	< 0.288	< 0.291	< 0.286	< 0.294	< 0.293	< 0.287	< 0.297	< 0.297	< 0.814	< 0.810	< 0.821	< 0.793	< 0.782
PFHxS	Perfluorohexanesulfonoic acid	355-46-4	ng/g	--	--	< 0.309	< 0.308	1.14	0.507 J	0.333 J	< 0.302	< 0.306	< 0.305	< 0.299	< 0.302	< 1.02	< 1.02	< 1.03	< 0.997	< 0.983
PFHpS	Perfluoroheptanesulfonic acid	375-92-8	ng/g	--	--	< 0.514	< 0.512	< 0.496	< 0.501	< 0.492	< 0.505	< 0.504	< 0.493	< 0.51	< 0.511	< 0.590	< 0.587	< 0.596	< 0.576	< 0.568
PFOS	Perfluorooctanesulfonic acid	1763-23-1	ng/g	1,260	16,400	< 0.651	31.7	2.19 J	< 0.624	< 0.618	< 0.634	< 0.644	2.41	1.74	< 0.635	< 1.12	< 1.12	< 1.13	< 1.09	< 1.08
PFNS	Perfluorononanesulfonic acid	68259-12-1	ng/g	--	--	< 0.824	< 0.821	< 0.796	< 0.804	< 0.789	< 0.811	< 0.809	< 0.791	< 0.819	< 0.819	< 1.15	< 1.14	< 1.16	< 1.12	< 1.10
PFDS	Perfluorodecanesulfonic acid	335-77-3	ng/g	--	--	< 0.241	< 0.24	< 0.233	< 0.235	< 0.231	< 0.237	< 0.236	< 0.231	< 0.239	< 0.24	< 0.754	< 0.750	< 0.761	< 0.735	< 0.725
PFDoS	Perfluorododecanesulfonic acid	79780-39-5	ng/g	--	--	< 0.42	< 0.419	< 0.406	< 0.41	< 0.402	< 0.413	< 0.412	< 0.403	< 0.417	< 0.418	< 1.40	< 1.40	< 1.42	< 1.37	< 1.35
4:2 FTS	4:2 Fluorotelomer Sulfonic Acid	757124-72-4	ng/g	--	--	< 0.641	< 0.639	< 0.619	< 0.625	< 0.614	< 0.63	< 0.629	< 0.615	< 0.637	< 0.637	< 0.943	< 0.938	< 0.951	< 0.919	< 0.906
6:2 FTS	6:2 Fluorotelomer sulfonic acid	27619-97-2	ng/g	--	--	< 0.516	11.6	< 0.498	2.31	2.39	< 0.507	< 0.506	< 0.495	< 0.512	< 0.513	< 1.12	< 1.11	< 1.13	< 1.09	< 1.07
8:2 FTS	8:2 Fluorotelomer sulfonic acid	39108-34-4	ng/g	--	--	< 0.585	23.9	< 0.565	< 0.571	< 0.561	< 0.576	< 0.574	< 0.562	< 0.581	< 0.582	< 1.13	< 1.12	< 1.14	< 1.10	< 1.08
Sulfonamides, Sulfomidoacetic acids, Sulfonamidoethanols:																				
PFOSA	Perfluorooctane sulfonamide	754-91-6	ng/g	--	--	< 0.569	< 0.567	< 0.55	< 0.555	< 0.545	< 0.56	< 0.559	< 0.547	< 0.566	< 0.566	*4.87 J+*	1.37 J	*16.1*	1.64 J	< 1.04
NMeFOSA	N-Methyl Perfluorooctane sulfonamide	31506-32-8	ng/g	--	--	R	< 1.33	< 1.29	R	R	< 1.31	R	< 1.28	< 1.32	< 1.32	< 2.22	< 2.21	< 2.24	< 2.17	< 2.14
NEtFOSA	N-Ethyl Perfluorooctane sulfonamide	4151-50-2	ng/g	--	--	R	2.85 J+	R	R	R	< 0.76	< 0.771	< 0.769	R	< 0.761	< 2.31	< 2.30	< 2.33	< 2.25	< 2.22
MeFOSAA	N-Methylperfluorooctanesulfonamidoacetic acid	2355-31-9	ng/g	--	--	< 0.402	< 0.401	< 0.388	< 0.392	< 0.385	< 0.396	< 0.395	< 0.386	< 0.399	< 0.4	< 0.943	< 0.938	< 0.951	< 0.919	< 0.906
EtFOSAA	N-Ethylperfluorooctanesulfonamidoacetic acid	2991-50-6	ng/g	--	--	< 0.378	< 0.377	< 0.365	< 0.369	< 0.362	< 0.372	< 0.371	< 0.363	< 0.376	< 0.376	< 1.03	< 1.03	< 1.04	< 1.01	< 0.992
NMeFOSE	N-Methyl Perfluorooctane sulfonamidoethanol	24448-09-7	ng/g	--	--	< 0.617	< 0.615	< 0.596	< 0.602	< 0.591	< 0.607	< 0.606	< 0.593	< 0.613	< 0.614	< 1.98	< 1.97	< 2.00	< 1.94	< 1.91
NEtFOSE	N-Ethyl Perfluorooctane sulfonamidoethanol	1691-99-2	ng/g	--	--	< 0.733	< 0.73	< 0.708	< 0.715	< 0.702	< 0.721	< 0.719	< 0.703	< 0.728	< 0.728	R	< 1.55	< 1.57	< 1.52	< 1.50
Replacement Chemicals:																				
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	ng/g	--	--	< 0.864	< 0.861	< 0.835	< 0.843	< 0.828	< 0.85	< 0.848	< 0.83	< 0.858	< 0.859	< 1.55	< 1.55	< 1.57	< 1.51	< 1.49
DONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4	ng/g	--	--	< 0.251	< 0.25	< 0.242	< 0.245	< 0.24	< 0.247	< 0.246	< 0.241	< 0.249	< 0.249	< 0.635	< 0.632	< 0.641	< 0.619	< 0.611
9Cl-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	ng/g	--	--	< 0.326	< 0.325	< 0.315	< 0.319	< 0.313	< 0.321	< 0.32	< 0.313	< 0.324	< 0.325	< 1.06	< 1.05	< 1.07	< 1.03	< 1.02
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	ng/g	--	--	< 0.529	< 0.528	< 0.512	< 0.517	< 0.507	< 0.521	< 0.52	< 0.508	< 0.526	< 0.527	< 0.982	< 0.977	< 0.991	< 0.958	< 0.944

Notes:
ng/g - nanograms per gram or parts per billion (ppb)
ft bgs - feet below ground surface
DUP - duplicate
J - Estimated value (+/- indicate the direction of bias)
R - Rejected due to a quality control exceedance (low extractable internal standards (EIS) recovery)
Non-detects reported as less than Method Detection Limit
AMW-02-no sample collected because was in perched water

Table 3
Groundwater Results
Chippawa Valley Regional Airport Results
Eau Claire, WI

Acronym	Analyte	CAS No	Units	ES (proposed)	PAL (proposed)	Field Sample ID: / Sample Date: AMW-01 6/7/2022	AMW-02 6/7/2022	AMW-03 6/8/2022	AMW-04 6/8/2022	AMW-05 6/7/2022	MW-51A 6/7/2022	MW-51A DUP 6/7/2022	MW-55A 6/7/2022
Carboxylic Acids:													
PFBA	Perfluorobutanoic acid	375-22-4	ng/L	10000	2000	3.95	R	1,120	15.6	22.7	55.7	57.1	5.39
PFPeA	Perfluoropentanoic acid	2706-90-3	ng/L	--	--	9.02	< 1.08	6,040	50	51.3	14	14.2	5.94
PFHxA	Perfluorohexanoic acid	307-24-4	ng/L	150000	30000	7.2	< 1.16	3,270	27.6	248	14.1	14.3	2.14
PFHpA	Perfluoroheptanoic acid	375-85-9	ng/L	--	--	2.59	< 1.33	1,220	17.3	70.6	4.51	3.78	< 0.947
PFOA	Perfluorooctanoic acid	335-67-1	ng/L	20[c]	2[c]	1.99	1.55	**1,020**	*11.5*	**553**	*14*	*13.2*	< 0.968
PFNA	Perfluorononaoic acid	375-95-1	ng/L	30	3	< 0.736	< 1.08	*11.8*	< 0.745	*5.91*	< 0.747	< 0.747	< 0.765
PFDA	Perfluorodecanoic acid	335-76-2	ng/L	300	60	< 0.921	< 1.35	< 0.942	< 0.933	< 0.960	< 0.936	< 0.936	< 0.957
PFUnA	Perfluoroundecanoic acid	2058-94-8	ng/L	3000	600	< 0.736	< 1.08	< 0.752	< 0.745	< 0.767	< 0.747	< 0.747	< 0.765
PFDoA	Perfluorododecanoic acid	307-55-1	ng/L	500	100	< 0.951	< 1.39	< 0.972	< 0.962	< 0.991	< 0.965	< 0.965	< 0.988
PFTrDA	Perfluorotridecanoic acid	72629-94-8	ng/L	--	--	< 0.639	R	< 0.653	< 0.647	< 0.666	< 0.648	< 0.648	< 0.664
PFTeDA	Perfluorotetradecanoic acid	376-06-7	ng/L	10000	2000	< 0.795	R	< 0.812	< 0.804	< 0.828	< 0.807	< 0.807	< 0.826
Sulfonic Acids:													
PFBS	Perfluorobutanesulfonic acid	375-73-5	ng/L	450000	90000	6.51	< 1.29	534	4.88	65.4	21.9	21.6	12.6
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4	ng/L	--	--	7.05	< 1.17	791	2.83	139	2.22	2	1.89
PFHxS	Perfluorohexanesulfonoic acid	355-46-4	ng/L	40	4	*27*	2.18	**7,080**	**52.2**	**3,610**	*6.48*	*6.64*	*10.5*
PFHpS	Perfluoroheptanesulfonic acid	375-92-8	ng/L	--	--	< 0.580	< 0.848	273	3.5	90.3	< 0.589	< 0.589	1.64
PFOS	Perfluorooctanesulfonic acid	1763-23-1	ng/L	20[c]	2[c]	*6.13*	*4.79 J*	**5,230**	**230**	**3,160**	*2.14*	*2.41*	*11.9 J*
PFNS	Perfluorononanesulfonic acid	68259-12-1	ng/L	--	--	< 1.13	< 1.65	< 1.15	< 1.14	< 1.17	< 1.14	< 1.14	< 1.17
PFDS	Perfluorodecanesulfonic acid	335-77-3	ng/L	--	--	< 0.741	< 1.08	< 0.757	< 0.750	< 0.772	< 0.752	< 0.752	< 0.770
PFDoS	Perfluorododecanesulfonic acid	79780-39-5	ng/L	--	--	< 1.38	< 2.02	< 1.41	< 1.40	< 1.44	< 1.40	< 1.40	< 1.43
4:2 FTS	4:2 Fluorotelomer Sulfonic Acid	757124-72-4	ng/L	--	--	< 0.926	< 1.35	257	< 0.938	< 0.965	< 0.941	< 0.940	< 0.963
6:2 FTS	6:2 Fluorotelomer sulfonic acid	27619-97-2	ng/L	--	--	9.8	< 1.60	12,800 J	119	93.5	< 1.11	< 1.11	< 1.14
8:2 FTS	8:2 Fluorotelomer sulfonic acid	39108-34-4	ng/L	--	--	< 1.11	< 1.62	2.02	< 1.12	7.33	< 1.12	< 1.12	< 1.15
Sulfonamides, Sulfomidoacetic acids, Sulfonamidoethanols:													
PFOSA	Perfluorooctane sulfonamide	754-91-6	ng/L	20[c]	2[c]	< 1.06	*6.98*	< 1.09	1.99	**601**	*2.19 J*	*2.45*	*3.95 J*
NMeFOSA	N-Methyl perfluorooctane sulfonamide	31506-32-8	ng/L	--	--	R	R	< 2.23	< 2.21	< 2.28	< 2.22	< 2.22	< 2.27
NEtFOSA	N-Ethyl perfluorooctane sulfonamide	4151-50-2	ng/L	20[c]	2[c]	R	R	< 2.32	< 2.29	< 2.36	< 2.30	< 2.30	< 2.36
MeFOSAA	N-Methylperfluorooctanesulfonamidoacetic acid	2355-31-9	ng/L	--	--	< 0.926	< 1.35	< 0.947	< 0.938	< 0.965	< 0.941	< 0.940	< 0.963
EtFOSAA	N-Ethylperfluorooctanesulfonamidoacetic acid	2991-50-6	ng/L	20[c]	2[c]	< 1.01	< 1.48	< 1.04	< 1.03	< 1.06	< 1.03	< 1.03	< 1.05
NMeFOSE	N-Methyl perfluorooctane sulfonamidoethanol	24448-09-7	ng/L	--	--	< 1.95	R	< 1.99	< 1.97	< 2.03	< 1.98	< 1.98	< 2.03
NEtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol	1691-99-2	ng/L	20[c]	2[c]	< 1.53	R	< 1.56	< 1.55	< 1.60	< 1.55	< 1.55	< 1.59
Replacement Chemicals:													
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	ng/L	300	30	< 1.53	< 2.23	< 1.56	< 1.54	< 1.59	< 1.55	< 1.55	< 1.59
DONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4	ng/L	3000	600	< 0.624	< 0.912	< 0.638	< 0.632	< 0.650	< 0.634	< 0.634	< 0.648
9Cl-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	ng/L	--	--	< 1.04	< 1.52	< 1.06	< 1.05	< 1.08	< 1.05	< 1.05	< 1.08
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	ng/L	--	--	< 0.965	< 1.41	< 0.986	< 0.977	< 1.01	< 0.980	< 0.980	< 1.00
Combined 6 standard [C]			ng/L	20[c]	2[c]	*8.12*	*13.3*	**6,250**	**243**	**4,310**	*18.3*	*18.1*	*15.9*

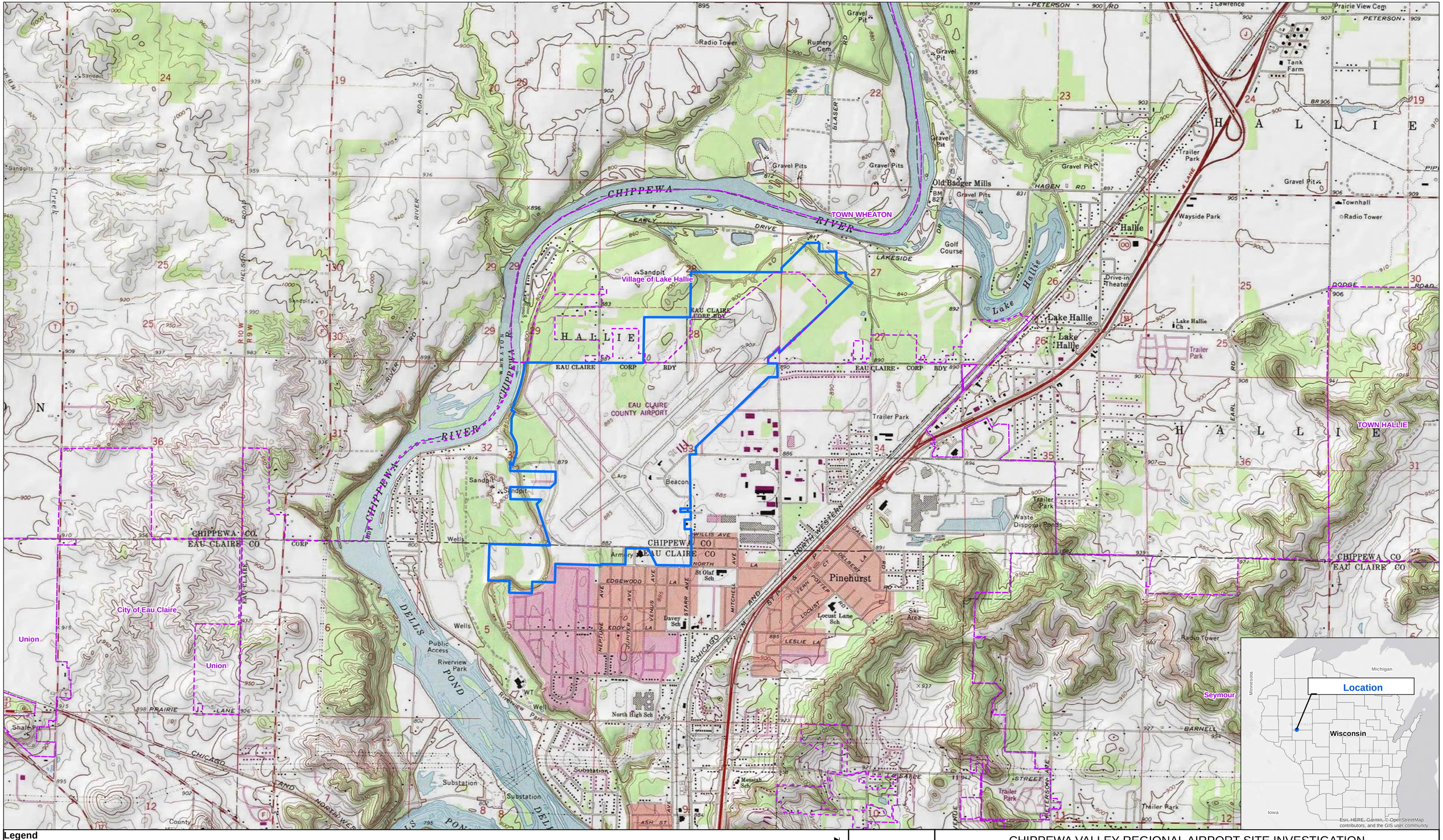
Notes:
[C] DHS recommends a combined (c) standard for NEtFOSE, NEtFOSA, NEtFOSAA, FOSA, PFOS and PFOA.
ng/L - nanograms per liter or parts per trillion (ppt)
J - Estimated concentration (+/- indicate the direction of bias).
R - Rejected due to a quality control exceedance (low extractable internal standards (EIS) recovery
Non-detects reported as less than Method Detection Limit
Bold indicates a ES exceedance, proposed Recommended Groundwater Standards (Cycle 11), November 6, 2020.
Italics and underlining indicates an PAL exceedance of the sed. Recommended Groundwater Standards (Cycle 11), November 6, 2020.
-- No NR 140 ES or PAL established.

Table 3
Groundwater Results
Chippawa Valley Regional Airport Results
Eau Claire, WI

Acronym	Analyte	CAS No	Units	ES (proposed)	PAL (proposed)	Field Sample ID: Equipment Blank Sample Date: 6/7/2022	Field Blank 6/8/2022
Carboxylic Acids:							
PFBA	Perfluorobutanoic acid	375-22-4	ng/L	10000	2000	< 0.984	< 0.985
PFPeA	Perfluoropentanoic acid	2706-90-3	ng/L	--	--	< 0.736	< 0.737
PFHxA	Perfluorohexanoic acid	307-24-4	ng/L	150000	30000	< 0.794	< 0.795
PFHpA	Perfluoroheptanoic acid	375-85-9	ng/L	--	--	< 0.911	< 0.912
PFOA	Perfluorooctanoic acid	335-67-1	ng/L	20[c]	2[c]	< 0.931	< 0.932
PFNA	Perfluorononaoic acid	375-95-1	ng/L	30	3	< 0.736	< 0.737
PFDA	Perfluorodecanoic acid	335-76-2	ng/L	300	60	< 0.921	< 0.922
PFUnA	Perfluoroundecanoic acid	2058-94-8	ng/L	3000	600	< 0.736	< 0.737
PFDoA	Perfluorododecanoic acid	307-55-1	ng/L	500	100	< 0.950	< 0.951
PFTrDA	Perfluorotridecanoic acid	72629-94-8	ng/L	--	--	< 0.638	< 0.639
PFTeDA	Perfluorotetradecanoic acid	376-06-7	ng/L	10000	2000	< 0.794	< 0.795
Sulfonic Acids:							
PFBS	Perfluorobutanesulfonic acid	375-73-5	ng/L	450000	90000	< 0.882	< 0.883
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4	ng/L	--	--	< 0.799	< 0.800
PFHxS	Perfluorohexanesulfonoic acid	355-46-4	ng/L	40	4	< 1.00	< 1.00
PFHpS	Perfluoroheptanesulfonic acid	375-92-8	ng/L	--	--	< 0.580	< 0.581
PFOS	Perfluorooctanesulfonic acid	1763-23-1	ng/L	20[c]	2[c]	< 1.10	< 1.10
PFNS	Perfluorononanesulfonic acid	68259-12-1	ng/L	--	--	< 1.13	< 1.13
PFDS	Perfluorodecanesulfonic acid	335-77-3	ng/L	--	--	< 0.741	< 0.742
PFDoS	Perfluorododecanesulfonic acid	79780-39-5	ng/L	--	--	< 1.38	< 1.38
4:2 FTS	4:2 Fluorotelomer Sulfonic Acid	757124-72-4	ng/L	--	--	< 0.926	< 0.927
6:2 FTS	6:2 Fluorotelomer sulfonic acid	27619-97-2	ng/L	--	--	< 1.10	< 1.10
8:2 FTS	8:2 Fluorotelomer sulfonic acid	39108-34-4	ng/L	--	--	< 1.11	< 1.11
Sulfonamides, Sulfomidoacetic acids, Sulfonamidoethanols:							
PFOSA	Perfluorooctane sulfonamide	754-91-6	ng/L	20[c]	2[c]	< 1.06	< 1.06
NMeFOSA	N-Methyl perfluorooctane sulfonamide	31506-32-8	ng/L	--	--	< 2.18	< 2.19
NEtFOSA	N-Ethyl perfluorooctane sulfonamide	4151-50-2	ng/L	20[c]	2[c]	< 2.27	< 2.27
MeFOSAA	N-Methylperfluorooctanesulfonamidoacetic acid	2355-31-9	ng/L	--	--	< 0.926	< 0.927
EtFOSAA	N-Ethylperfluorooctanesulfonamidoacetic acid	2991-50-6	ng/L	20[c]	2[c]	< 1.01	< 1.01
NMeFOSE	N-Methyl perfluorooctane sulfonamidoethanol	24448-09-7	ng/L	--	--	< 1.95	< 1.95
NEtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol	1691-99-2	ng/L	20[c]	2[c]	< 1.53	< 1.53
Replacement Chemicals:							
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	ng/L	300	30	< 1.53	< 1.53
DONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4	ng/L	3000	600	< 0.624	< 0.624
9Cl-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	ng/L	--	--	< 1.04	< 1.04
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	ng/L	--	--	< 0.965	< 0.966
Combined 6 standard [C]			ng/L	20[c]	2[c]		

Notes:
[C] DHS recommends a combined (c) standard for NEtFOSE, NEtFOSA, NEtFOSAA, FOSA, PFOS and PFOA.
ng/L - nanograms per liter or parts per trillion (ppt)
J - Estimated concentration (+/- indicate the direction of bias).
R - Rejected due to a quality control exceedance (low extractable internal standards (EIS) recovery
Non-detects reported as less than Method Detection Limit
Bold indicates a ES exceedance, proposed Recommended Groundwater Standards (Cycle 11), November 6, 2020.
Italics and underlining indicates an PAL exceedance of the sed. Recommended Groundwater Standards (Cycle 11), November 6, 2020
-- No NR 140 ES or PAL established.

Figures



Legend

- Municipal Boundaries
- Subject Property Line

NOTES
1. US Topo Map: Copyright© 2013 National Geographic Society, i-cubed

N

0 625 1,250 2,500 Feet

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Milwaukee WI

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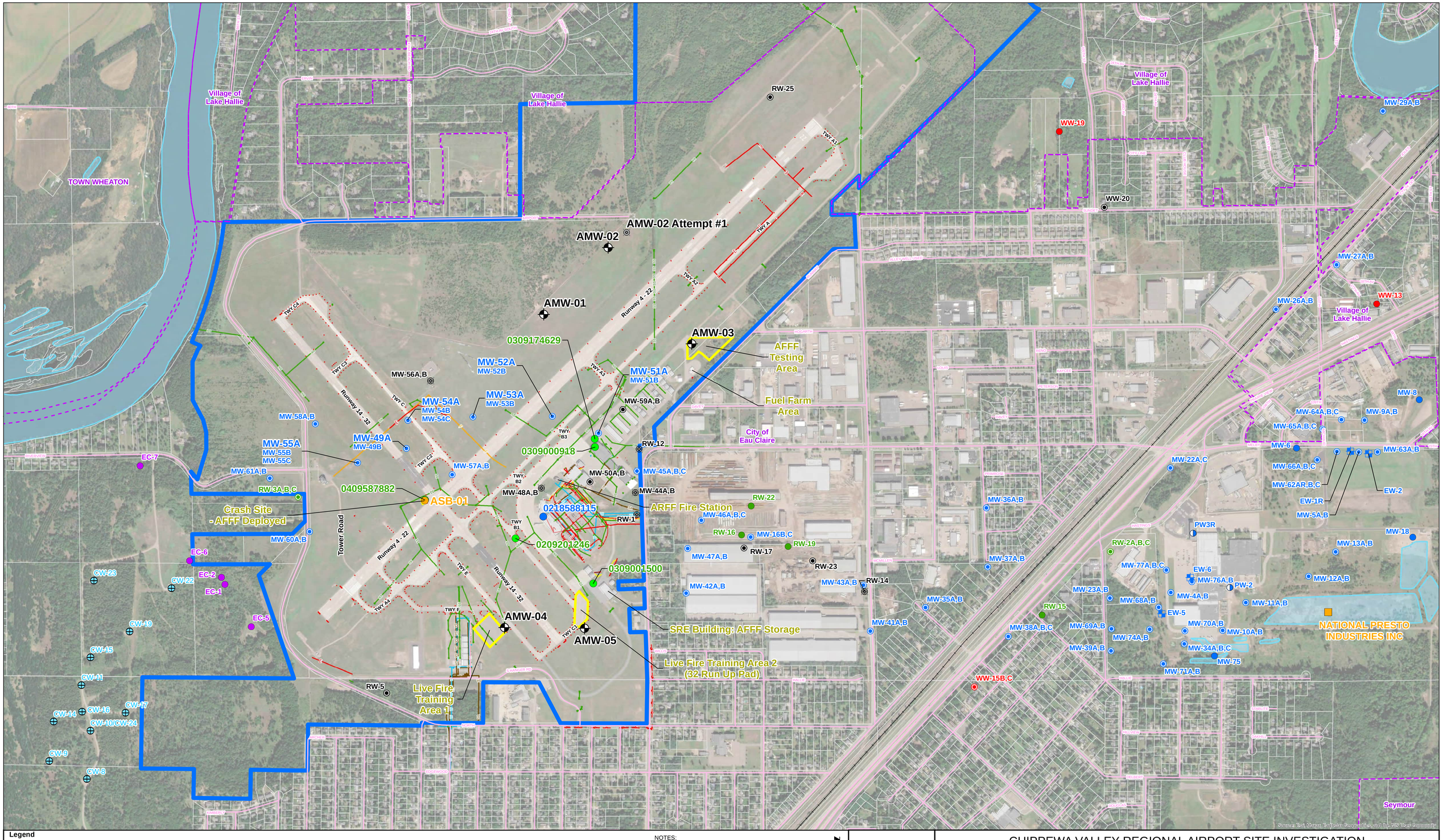
CHIPPEWA VALLEY REGIONAL AIRPORT SITE INVESTIGATION

SITE LOCATION

Project No.
60669304

Date:
July 2022

FIGURE 1



Legend

- AECOM Hand Auger
- AECOM Monitoring Well
- Abandoned Well
- Lost Well
- City of Eau Claire Monitoring Well
- NPI LUST Well
- NPI Superfund Extraction Well
- NPI Superfund Monitoring Well
- NPI Superfund Monitoring Well Nest
- USEPA Monitoring Well
- USEPA Monitoring Well Nest
- WDNR Monitoring Well
- WDNR Monitoring Wel Nest
- Remediation - Open Site Points
- Remediation - Closed Site Points
- Solid Waste Landfills and Historic Waste Site Points
- City Wells
- PFAS Potenial Areas of Concern
- Municipal Boundaries
- Property Line
- Parcels
- Water Bank
- Water Body
- Electrical
- Electrtrical (undefined)
- Electrical - Beacon
- Electrical (AFLD-ELEC-HH)
- Electrical Panel
- Electrical (AFLD-ELEC-PAPI)
- Electrical (AFLD-ELEC-REIL)
- Electrical Runway Lights
- Electrical (AFLD-ELEC-THD LITE)
- Taxyway Light
- Electrical (AFLD-ELEC-WINDCONE)
- Electrical (TRANS)
- Electrical (GROUND ROD)
- Electrical (beacon wiring)
- Site Lights
- Fiber Optics
- Charter Cable
- Telephone
- Gas
- Sanitary Sewer
- Storm Sewer
- Water

NOTES:
1. GIS county data was obtained from Eau Claire County GIS and Chippewa County GIS departments. Historical well data adapted from Gannett Fleming figures dated 2012.

0 250 500 1,000 Feet

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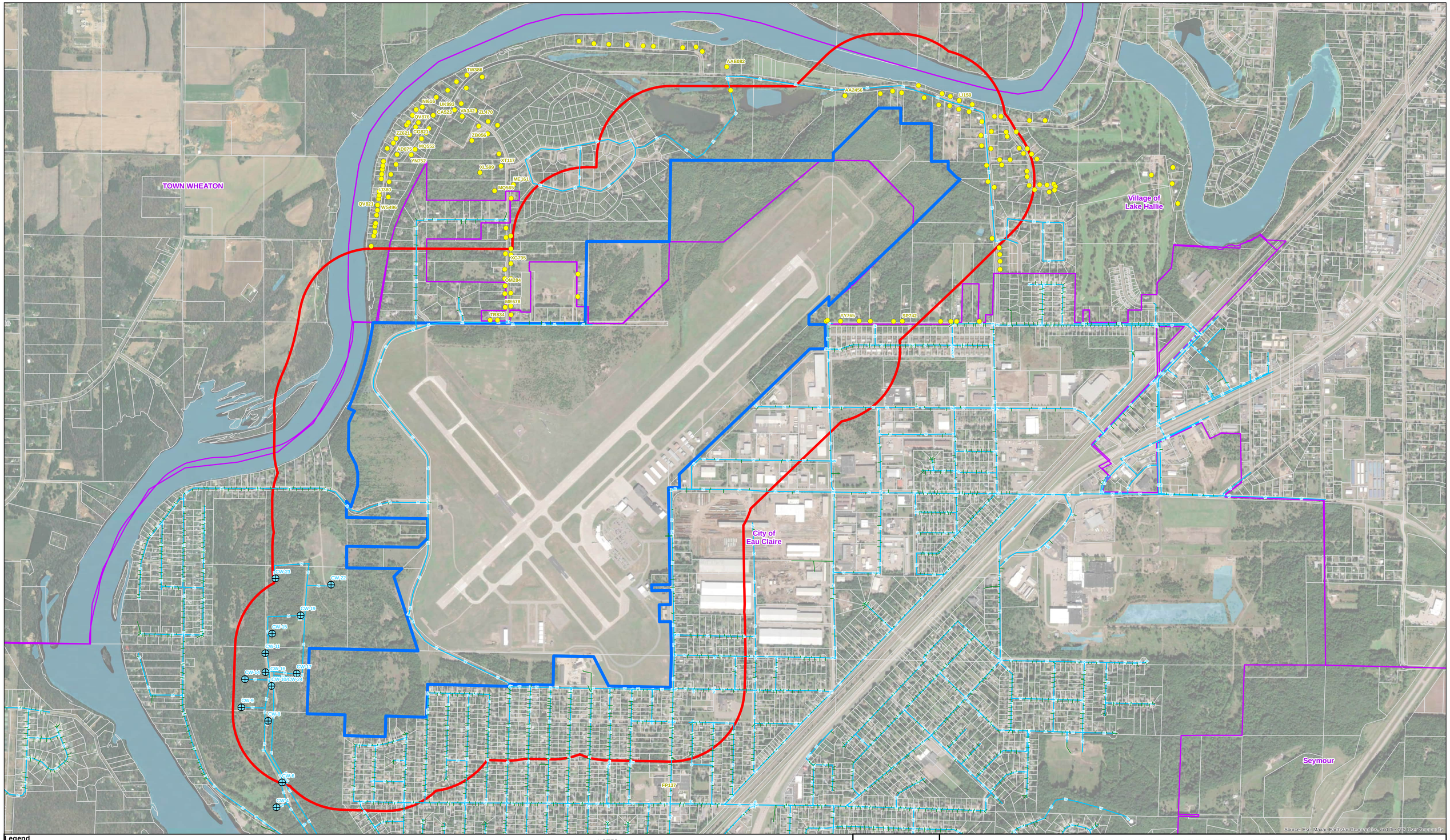
CHIPPEWA VALLEY REGIONAL AIRPORT SITE INVESTIGATION

SITE FEATURES

Project No.
60669304

Date:
December 2022

FIGURE 2



Legend

- Undetermined if on City Water
- City Wells
- Watermain
- Property Line
- 1200 foot Radius of Property Line
- Municipal Boundaries
- Parcels
- Water Body

NOTES:
1. Watermain and GIS data was obtained from Eau Claire County GIS and Chippewa County GIS departments. Lake Hallie watermain was adapted from Lake Hallie internet website Hydrate Map (https://lakehallie.us/).

N

0 350 700 1,400 Feet

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CHIPPEWA VALLEY AIRPORT INVESTIGATION

WATERMAINS AND POTABLE WELLS

Project No. 60669304

Date: December 2022

FIGURE 3

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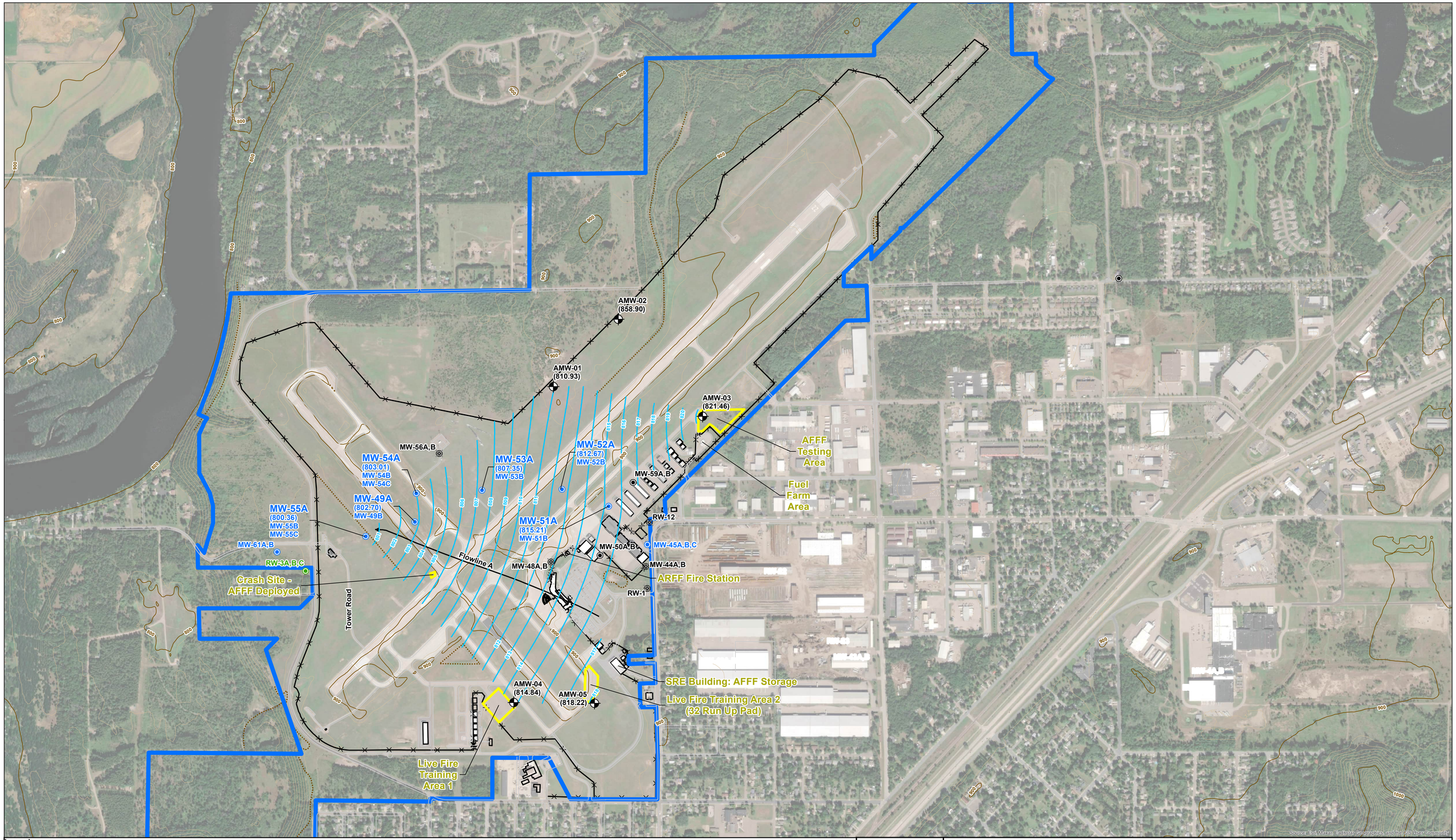

Legend

- AECOM Monitoring Well
- NPI Superfund Monitoriing Well Nest
- Piezometric Surface Contour (2-foot Interval) June 7, 2022 (2nd Quarter)
- Groundwater Flow Direction
- PFAS Potenial Areas of Concern
- Road
- Property Line
- Building
- Fence
- Ditch
- Surface Contours (100-Foot Interval)
- Surface Contours (10-Foot Interval)

NOTES:
1. Northern Portion of Figure Displays 20-Foot Surface Contour Intervals. The Southern Portion of the Figure Displays 10-Foot Contour Intervals.
2. Aerial Imagery: September 22, 2018
3. AMW-02 was not used in the coutouring of the piezometric surface.

N

0 250 500 1,000 Feet

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CHIPPEWA VALLEY REGIONAL AIRPORT SITE INVESTIGATION

PIEZOMETRIC CONTOUR MAP (JUNE 7, 2022)

Project No. 60669304

Date: August 2022

FIGURE 4

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Abbr	Analyte	Units	NR 720 Residual: Non-Industrial Direct Contact	NR 720 Residual: Industrial Direct Contact
PFOA	Perfluorooctanoic acid	ng/g	1,260	16,400
PFNA	Perfluorononaoic acid	ng/g	--	--
PFDA	Perfluorodecanoic acid	ng/g	--	--
PFHxS	Perfluorohexanesulfonoic acid	ng/g	--	--
PFOS	Perfluorooctanesulfonic acid	ng/g	1,260	16,400
6:2 FTS	6:2 Fluorotelomer sulfonic acid	ng/g	--	--
8:2 FTS	8:2 Fluorotelomer sulfonic acid	ng/g	--	--
NEtFOSA	N-Ethyl Perfluorooctane sulfonamide	ng/g	--	--

AMW-03

Compound	1-2ft	35-37ft	68-70ft
PFOA	0.391 J	< 0.26	< 0.262
PFNA	1.78	< 0.358	< 0.361
PFDA	1.37	< 0.425	< 0.429
PFHxS	< 0.308	1.14	0.507 J
PFOS	31.7	2.19 J	< 0.624
6:2 FTS	11.6	< 0.498	2.31
8:2 FTS	23.9	< 0.565	< 0.571
NEtFOSA	2.85 J+	R	R

AMW-05

Compound	1-2ft	65-67ft
PFOS	2.41	1.74

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Legend
- AECOM Monitoring Well
- AECOM AMW-02 Refusal
- PFAS Potential Areas of Concern
- Road
- AECOM Soil Boring
- Property Line
- Building
- Fence
- Ditch

NOTES:
1. Aerial Imagery: September 22, 2018
2. Soil analytical data was collected between May 9 and 12, 2022
3. All concentrations are reported as ng/g or parts per billion (ppb)

0 250 500 1,000 Feet

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CHIPPEWA VALLEY REGIONAL AIRPORT SITE INVESTIGATION

SOIL ANALYTICAL MAP - COLLECTED MAY 2022

Project No. 60669304

Date: August 2022

FIGURE 5

AMW-02	
PFOA	1.55
PFHxS	2.18
PFOS	4.79 J
PFOSA	6.98
NEtFOSA	NL
EtFOSAA	< 1.48
NEtFOSE	R
*Combined 6	*13.3*

AMW-01	
PFBA	3.95
PFPeA	9.02
PFHxA	7.2
PFHpA	2.59
PFOA	1.99
PFBS	6.51
PFPeS	7.05
PFHxS	*27*
PFOS	6.13
6:2 FTS	9.8
PFOSA	< 1.06
NEtFOSA	R
EtFOSAA	< 1.01
NEtFOSE	< 1.53
*Combined 6	8.12

AMW-02 Attempt #1

AMW-03	
PFBA	1120
PFPeA	6040
PFHxA	3270
PFHpA	1220
PFOA	1020
PFNA	*11.8*
PFBS	534
PFPeS	791
PFHxS	**7080**
PFHpS	273
PFOS	5230
4:2 FTS	257
6:2 FTS	12800 J
8:2 FTS	2.02
PFOSA	< 1.09
NEtFOSA	< 2.32
EtFOSAA	< 1.04
NEtFOSE	< 1.56
*Combined 6	**6250**

MW-55A	
PFBA	5.39
PFPeA	5.94
PFHxA	2.14
PFBS	12.6
PFPeS	1.89
PFHxS	*10.5*
PFHpS	1.64
PFOS	11.9 J
PFOSA	3.95 J
NEtFOSA	< 2.36
EtFOSAA	< 1.05
NEtFOSE	< 1.59
*Combined 6	*15.9*

AFFF Testing Area

Fuel Farm Area

MW-51A	
PFBA	55.7
PFPeA	14
PFHxA	14.1
PFHpA	4.51
PFOA	14
PFBS	21.9
PFPeS	2.22
PFHxS	*6.48*
PFOS	2.14
PFOSA	2.19 J
NEtFOSA	< 2.30
EtFOSAA	< 1.03
NEtFOSE	< 1.55
*Combined 6	*18.3*

ARFF Fire Station

Crash Site - AFFF Deployed

Tower Road

AMW-04	
PFBA	15.6
PFPeA	50
PFHxA	27.6
PFHpA	17.3
PFOA	11.5
PFBS	4.88
PFPeS	2.83
PFHxS	**52.2**
PFHpS	3.5
PFOS	230
6:2 FTS	119
PFOSA	1.99
NEtFOSA	< 2.29
EtFOSAA	< 1.03
NEtFOSE	< 1.55
*Combined 6	**243**

SRE Building: AFFF Storage

Live Fire Training Area 2 (32 Run Up Pad)

AMW-05	
PFBA	22.7
PFPeA	51.3
PFHxA	248
PFHpA	70.6
PFOA	553
PFNA	*5.91*
PFBS	65.4
PFPeS	139
PFHxS	**3610**
PFHpS	90.3
PFOS	3160
6:2 FTS	93.5
8:2 FTS	7.33
PFOSA	601
NEtFOSA	< 2.36
EtFOSAA	< 1.06
NEtFOSE	< 1.60
*Combined 6	**4310**

Live Fire Training Area 1

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Legend

- AECOM Monitoring Well
- AMW-02 Refusal
- NPI Superfund Monitoring Well Nest
- PFAS Potenial Areas of Concern
- Road
- Property Line
- Building
- Fence
- Ditch

NOTES:
1. Aerial Imagery: September 22, 2018
2. Groundwater analytical data was collected on June 7 and 8, 2022
3.Units for the reported concentrations are ng/l or nanograms per litter (ppt)

Feet
0 250 500 1,000

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CHIPPEWA VALLEY REGIONAL AIRPORT SITE INVESTIGATION

GROUNDWATER ANALYTICAL MAP - COLLECTED JUNE 2022

Project No. 60669304

Date: August 2022

FIGURE 6

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Appendix A Laboratory Reports:

- Village of Lake Hallie, Municipal Well #4, NLS Laboratory Report
- AECOM Data Validation - Soil Laboratory Report
- Vista Soil Laboratory Report
- AECOM Data Validation – Groundwater Laboratory Report
- Vista Groundwater Laboratory Report

ANALYTICAL RESULTS: Perfluorinated Chemicals by Method WIPFAS Non-Potable Water Analysis

Customer: Lake Hallie Waterworks NLS Project: 369651

Project Description: Investigative Drinking Water Analysis

Project Title: Template: WIPFAS Printed: 08/03/2021 08:00

Sample: 1266071 Well # 4 Collected: 07/19/21 Analyzed: 08/01/21 - Analytes: 33

ANALYTE NAME	RESULT	UNITS	DIL	LOD	MRL	MCL	Note
Perfluorobutanoic acid (PFBA)	<0.96	ng/L	1	0.96	4.0		
Perfluoropentanoic acid (PFPeA)	<0.85	ng/L	1	0.85	4.0		
Perfluorohexanoic acid (PFHxA)	<0.94	ng/L	1	0.94	4.0		
Perfluoroheptanoic acid (PFHpA)	<1.0	ng/L	1	1.0	4.0		
Perfluorooctanoic acid (PFOA)	<0.75	ng/L	1	0.75	4.0		
Perfluorononanoic acid (PFNA)	<0.93	ng/L	1	0.93	4.0		
Perfluorodecanoic acid (PFDA)	<1.4	ng/L	1	1.4	4.0		
Perfluoroundecanoic acid (PFUnA)	<1.8	ng/L	1	1.8	4.0		
Perfluorododecanoic acid (PFDoA)	<1.7	ng/L	1	1.7	4.0		
Perfluorotridecanoic acid (PFTriA)	<1.7	ng/L	1	1.7	4.0		
Perfluorotetradecanoic acid (PFTeA)	<1.2	ng/L	1	1.2	4.0		
Perfluorobutanesulfonic acid (PFBS)	<0.63	ng/L	1	0.63	3.5		
Perfluoropentanesulfonic acid (PFPeS)	<0.86	ng/L	1	0.86	3.8		
Perfluorohexanesulfonic acid (PFHxS)	<0.92	ng/L	1	0.92	3.7		
Perfluoroheptanesulfonic acid (PFHpS)	<0.73	ng/L	1	0.73	3.8		
Perfluorooctanesulfonic acid (PFOS)	<1.1	ng/L	1	1.1	3.7		
Perfluorononanesulfonic acid (PFNS)	<0.63	ng/L	1	0.63	3.8		
Perfluorodecanesulfonic acid (PFDS)	<0.62	ng/L	1	0.62	3.9		
Perfluorododecanesulfonic acid (PFDoS)	<1.3	ng/L	1	1.3	3.9		CC
4:2 Fluorotelomer sulfonic acid (4:2 FTSA)	<1.3	ng/L	1	1.3	3.7		
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	<1.7	ng/L	1	1.7	3.8		
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	<1.5	ng/L	1	1.5	3.8		
Perfluorooctane sulfonamide (FOSA)	<0.97	ng/L	1	0.97	4.0		
N-Methyl perfluorooctane sulfonamide (NMeFOSA)	<1.2	ng/L	1	1.2	4.0		
N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	<1.0	ng/L	1	1.0	4.0		
N-Methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	<1.1	ng/L	1	1.1	4.0		
N-Ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	<1.7	ng/L	1	1.7	4.0		
N-Methyl perfluorooctane sulfonamidoethanol (NMeFOSE)	<1.4	ng/L	1	1.4	4.0		
N-Ethyl perfluorooctane sulfonamidoethanol (NEtFOSE)	<1.0	ng/L	1	1.0	4.0		
Hexafluoropropylene oxide dimer acid (HFPO-DA)	<0.72	ng/L	1	0.72	4.0		
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	<0.73	ng/L	1	0.73	3.8		
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	<0.83	ng/L	1	0.83	3.7		
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUdS)	<1.1	ng/L	1	1.1	3.8		

NOTES APPLICABLE TO THIS ANALYSIS:

CC = Continuing calibration verification standard recovery was outside QC limits.
Perfluorododecanesulfonic acid (PFDoS) recovery 139%

All LOD/MRLs adjusted to reflect dilution.

AECOM
1555 N. RiverCenter Drive, Suite 214
Milwaukee, WI 53212
414.944.6080 tel
414.944.6081 fax

Data Validation Report

Project:	CVRA
Laboratory:	Vista Analytical Laboratory, 1104 Windfield Way, El Dorado Hills, CA 95762
Work Order (WO):	2205141
Analyses/Method:	Per- and Polyfluorinated Alkyl Substances (PFASs) / PFAS Isotope Dilution Method / 537 Modified
Validation Level:	Level 2
Prepared by:	Susanne Seydel Completed on: 7/18/2022

The samples listed below were collected by AECOM from May 9 through 13, 2022. The samples were received by the laboratory on May 17, 2022.

Sample ID	Quality Control	Sample Date / Time	Laboratory ID
Solid Samples:			
AMW-01 (80-80.5)		09-May-22 15:00	2205141-01
AMW-04 (1-2)		11-May-22 13:10	2205141-02
AMW-04 (69-70)		11-May-22 14:50	2205141-03
AMW-05 (1-2)		12-May-22 09:45	2205141-04
ASB-01 (1-2)		12-May-22 10:15	2205141-05
AMW-05 (65-67)		12-May-22 11:20	2205141-06
AMW-03 (1-2)		13-May-22 07:45	2205141-07
AMW-03 (35-37)		13-May-22 09:05	2205141-08
AMW-03 (68-70)		13-May-22 12:30	2205141-09
AMW-03 (68-70) Dup	Field duplicate of AMW-03 (68-70)	13-May-22 12:30	2205141-10
Groundwater Samples:			
Well #4 (Hydrant)*		12-May-22 11:30	2205141-14
Field Quality Control Samples:			
Decon water (PFAS Free)	Decontamination Water (from lab) (filtered)*	10-May-22 10:20	2205141-11
Decon water (Tap)	Decontamination Water (from tap)	11-May-22 10:15	2205141-12
EB-051122	Equipment Blank (split-spoon sampler) *	11-May-22 16:15	2205141-13
FB-051322	Field Blank	13-May-22 14:00	2205141-15

*Shown on COC.

Data validation activities were conducted with reference to:

- *Wisconsin DNR PFAS Updates,* March 1, 2021
- *Wisconsin PFAS Aqueous (Non-Potable Water) and Non-Aqueous Matrices Method Expectations*, EA-19-0001-C, 12/19/2019.
- *Data Validation Guidelines Module 3: Data Validation Procedure for Per- and Polyfluoroalkyl Substances Analysis by QSM Table B-15,* Department of Defense, 5/1/2020.

In the absence of method-specific information, laboratory quality control (QC) limits, or project-specific requirements, AECOMs professional judgment was used as appropriate.

REVIEW ELEMENTS

The data were evaluated based on the following parameters (where applicable to the method):

✓	Data completeness (chain-of-custody (CoC)/sample integrity
✓	Holding times
✓	Laboratory blanks
✗	Field and Equipment blanks
✗	Extracted Internal Standards (EIS) (Lab H flag)
✓	Laboratory control sample (LCS)
✗	Ion ratios (Lab Q flag)
✓	Field duplicates

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. The symbol (✗) indicates that a QC nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

SUMMARY

Based on the results of the validation, the data are valid as reported and may be used for decision making purposes, except for multiple results that were rejected (R flag) due to very low EIS recoveries. In addition, results were qualified as estimated (J flag, with bias flags as appropriate) due to transition ion ratios and EIS recoveries; and one result was qualified as estimated biased high (J+) due to field contamination. A detailed data validation discussion is provided below.

DETAILED REVIEW

Data Completeness

The data packages were reviewed and met the following acceptance criteria for completeness:

- The CoCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the CoC requests.

The following items are noted for informational purposes (and do not affect data usability):

- Field staff noted on the CoC record, that there was “low sample volume” collected for sample AMW-04 (69-70) (2205141-03). The analysis was able to proceed with the volume required. The method detection limits were not affected.
- The report’s case narrative indicated that the collection date for sample "AMW-03 (35-37)" was listed as "05/12/22" on the container label. The sample was logged as per the COC record, “5/13/22.” No action was required.

Holding Times

Samples were extracted within the 28-day holding time and analyzed within 30 days of extraction.

Laboratory Blanks

Laboratory method blanks (B22E216-BLK1, B22F021-BLK1, B22E192-BLK1) were analyzed to assess contamination from laboratory procedures. The method blanks were analyzed at the correct frequency. The results are expected to be less than one-half the method reporting limit (MRL). Contaminants were not detected in the method blanks.

Field (Ambient) and Equipment Blanks

Field blanks are analyzed to assess contamination from field procedures. Field equipment and ambient blanks were analyzed at the correct frequency. Contaminants were detected in the following blanks:

Lab ID	Blank ID	Parameter	Concentration	Affected Sample & Result	Qualification
2205141-11	Decon. water (PFAS Free)	PFOSA	1.37 J	Well #4	4.87 J+
2205141-12	Decon. water (Tap)	PFOSA	16.1		
2205141-13	EB-051122	PFOSA	1.64 J		

PFOSA was not detected in any of the soil samples. If an analyte is detected in the field blank, but not in the associated samples, no action is required.

PFOSA was detected in aqueous sample, Well #4. Since the result in the sample was 4.87 ng/l and greater than the limit of quantification but less than or equal to 5x the method blank, the result was flagged as J+.

Extracted Internal Standards

Extracted internal standards (EISs) are spiked into all field samples, field QC samples, and method QC samples and are used to quantitate the analytes. The EIS recoveries were within the WI limits of 10-150% for the FOSA, NMeFOSA, NEtFOSA, NMeFOSE, and NEtFOSE EISs, and were within the limits of 25-150% for other EISs, except for those listed below.

Lab ID	Sample ID	EIS Parameter	% R	Affected Parameter	Original Result	Final Result & Flag
2205141-01	AMW-01 (80-80.5)	d5-EtFOSA	2.30	EtFOSA	0.799 U ng/g	R
2205141-01	AMW-01 (80-80.5)	d3-MeFOSA	7.70	MeFOSA	1.33 U ng/g	R
2205141-03	AMW-04 (69-70)	d3-MeFOSA	9.60	MeFOSA	1.31 U ng/g	R
2205141-06	AMW-05 (65-67)	d5-EtFOSA	6.90	EtFOSA	0.753 U ng/g	R
2205141-07	AMW-03 (1-2)	d5-EtFOSA	9.50	EtFOSA	2.85 ng/g	J+
2205141-08	AMW-03 (35-37)	d5-EtFOSA	2.80	EtFOSA	0.739 U ng/g	R
2205141-09	AMW-03 (68-70)	d5-EtFOSA	2.10	EtFOSA	0.747 U ng/g	R
2205141-09	AMW-03 (68-70)	d3-MeFOSA	7.90	MeFOSA	1.30 U ng/g	R
2205141-10	AMW-03 (68-70) Dup	d5-EtFOSA	2.80	EtFOSA	0.740 U ng/g	R
2205141-10	AMW-03 (68-70) Dup	d3-MeFOSA	5.30	MeFOSA	1.28 U ng/g	R
2205141-14	Well #4	d5-EtFOSA	8.60	EtFOSA	1.56 U ng/l	R

LCS Results (OPR)

The OPR (Ongoing Precision and Recovery sample) or LCS, was analyzed to monitor the accuracy of the analytical method independent of matrix effects. Recoveries (%Rs) were within the WI limits 60% to 135% limit for normal range LCSs and were acceptable.

Ion Transition Ratios

Laboratory qualifiers indicate that several samples did not meet the ion transition ratio criteria which were qualified as "Q" by the laboratory and summarized below. These results were qualified as estimated (J) and are considered as estimated maximum concentrations.

Lab ID	Sample ID	Parameter	Concentration and Validator Flag	Units	MDL	RL
2205141-07	AMW-03 (1-2)	EtFOSA	2.85 J	ng/L	0.777	1.00
2205141-08	AMW-03 (35-37)	PFOS	2.19 J	ng/L	0.617	0.953
2205141-09	AMW-03 (68-70)	PFHxS	0.507 J	ng/L	0.296	0.481
2205141-11	Decon water (PFAS Free)	PFOSA	1.37 J	ng/L	1.08	1.97

Field Duplicate Results

Field duplicates are collected to assess the overall precision of field sampling and laboratory analysis. Samples AMW-03 (68-70) and AMW-03 (68-70) Dup were parent and field duplicate, respectively. Field duplicate relative percent differences (RPDs) were less than the groundwater criteria of 30%, or the absolute difference of the results were with ± the reporting limit (RL) if one or both results were less than five times the RL. A summary of the field duplicate results (detections only) and RPDs are as follows:

Sample & Compound(s)	Units	RL (max)	Sample Concentration	Field Duplicate Concentration	RPD (%)
PFHxS	ng/g	0.477	0.507	0.333 J	41.4
6:2 FTS	ng/g	'0.953	2.31	2.39	3.4

Per EPA guidance, the results for PFHxS were not qualified since the absolute difference of the sample concentrations was less than the method reporting limit.

Sample Results and Quantitation

Sample results were reviewed for correct methods, units, and reported analytes. No issues or discrepancies were found during this review.

Qualified Analytical Results

Results reported below the Reporting Limit/LOQ were qualified as estimated (J) by the laboratory; qualifications of these results were accepted by the Validator; however, they are not listed in the table below. In addition, R qualifiers take precedence over J qualifiers.

Table 1 - Data Validation Summary of Qualified Data

Lab ID	Sample ID	Analyte	Validation Qualifier (1)	Units	Reason Code (2)
2205141-13	Well #4	PFOSA	4.87 J+	ng/l	fb
2205141-08	AMW-03 (35-37)	PFOS	2.19 J	ng/g	ir
2205141-09	AMW-03 (68-70)	PFHxS	0.507 J	ng/g	ir
2205141-11	Decon water (PFAS Free)	PFOSA	1.37 J	ng/l	ir
2205141-01	AMW-01 (80-80.5)	EtFOSA	0.799 R	ng/g	eis
2205141-01	AMW-01 (80-80.5)	MeFOSA	1.33 R	ng/g	eis
2205141-03	AMW-04 (69-70)	MeFOSA	1.31 R	ng/g	eis
2205141-06	AMW-05 (65-67)	EtFOSA	0.753 R	ng/g	eis
2205141-07	AMW-03 (1-2)	EtFOSA	2.85 J+	ng/g	ir,eis
2205141-08	AMW-03 (35-37)	EtFOSA	0.739 R	ng/g	eis
2205141-09	AMW-03 (68-70)	EtFOSA	0.747 R	ng/g	eis
2205141-09	AMW-03 (68-70)	MeFOSA	1.30 R	ng/g	eis
2205141-10	AMW-03 (68-70) Dup	EtFOSA	0.740 R	ng/g	eis
2205141-10	AMW-03 (68-70) Dup	MeFOSA	1.28 R	ng/g	eis
2205141-14	Well #4	EtFOSA	1.56 R	ng/l	eis

(1): Data Validation Qualifiers:

J	Estimated, +/- indicate the direction of bias
R	Not usable for risk evaluations

(2): Reason Codes:

fb	field blank contamination
eis	Extracted internal standard
ir	Ion ratios

July 12, 2022

Vista Work Order No. 2205141

Mr. Andrew Mott
AECOM
558 North Main Street
Oshkosh, WI 54901

Dear Mr. Mott,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on May 17, 2022 under your Project Name 'CVRA'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at jfox@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Jamie Fox
Laboratory Director

Vista Work Order No. 2205141
Case Narrative

Sample Condition on Receipt:

Ten soil samples and five aqueous samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. The samples were received in good condition and within the recommended temperature requirements. The collection date for sample "AMW-03 (35-37)" was listed as "05/12/22" on the container label.

Analytical Notes:

PFAS Isotope Dilution Method - Solid

The samples were extracted and analyzed for a selected list of PFAS using Vista's Isotope Dilution Method. The results for PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

Holding Times

The samples were extracted and analyzed within the hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with each preparation batch. No analytes were detected in the Method Blanks above the Reporting Limit (RL). The OPR recoveries were within the method acceptance criteria.

The labeled standard recoveries outside the acceptance criteria are listed in the table below.

PFAS Isotope Dilution Method - Aqueous

The samples were extracted and analyzed for a selected list of PFAS using Vista's PFAS Isotope Dilution Method. The results for PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only. The samples with detections for PFOSA were confirmed through reanalysis.

Holding Times

The samples were extracted and analyzed within the hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above the Reporting Limit. The OPR recoveries were within the method acceptance criteria.

The labeled standard recoveries outside the acceptance criteria are listed in the table below.

QC Anomalies

LabNumber	SampleName	Analysis	Analyte	Flag	%Rec
2205141-01	AMW-01 (80-80.5)	PFAS Isotope Dilution Method	d3-MeFOSA	H	7.70
2205141-01	AMW-01 (80-80.5)	PFAS Isotope Dilution Method	d5-EtFOSA	H	2.30
2205141-03	AMW-04 (69-70)	PFAS Isotope Dilution Method	d3-MeFOSA	H	9.60
2205141-06	AMW-05 (65-67)	PFAS Isotope Dilution Method	d5-EtFOSA	H	6.90
2205141-07	AMW-03 (1-2)	PFAS Isotope Dilution Method	d5-EtFOSA	H	9.50
2205141-08	AMW-03 (35-37)	PFAS Isotope Dilution Method	d5-EtFOSA	H	2.80
2205141-09	AMW-03 (68-70)	PFAS Isotope Dilution Method	d3-MeFOSA	H	7.90
2205141-09	AMW-03 (68-70)	PFAS Isotope Dilution Method	d5-EtFOSA	H	2.10
2205141-10	AMW-03 (68-70) Dup	PFAS Isotope Dilution Method	d3-MeFOSA	H	5.30
2205141-10	AMW-03 (68-70) Dup	PFAS Isotope Dilution Method	d5-EtFOSA	H	2.80
2205141-14	Well #4	PFAS Isotope Dilution Method	d5-EtFOSA	H	8.60
B22E216-BLK1	B22E216-BLK1	PFAS Isotope Dilution Method	d5-EtFOSA	H	5.00
B22E216-BS1	B22E216-BS1	PFAS Isotope Dilution Method	d5-EtFOSA	H	5.70
B22F021-BS1	B22F021-BS1	PFAS Isotope Dilution Method	d3-MeFOSA	H	6.80

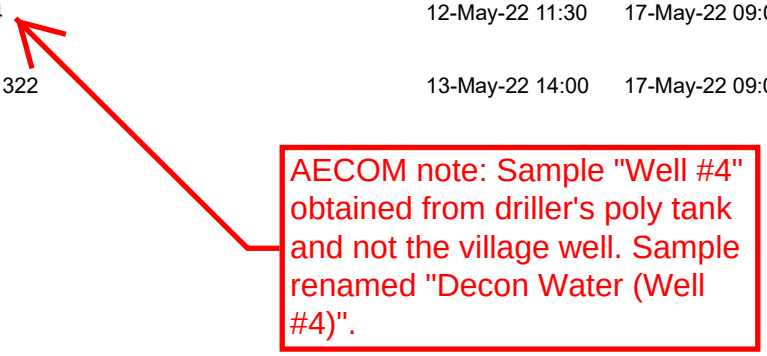
H = Recovery was outside laboratory acceptance criteria.

AECOM note: Sample "Well #4" obtained from driller's poly tank and not the village well. Sample renamed "Decon Water (Well #4)".

TABLE OF CONTENTS

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2205141-01	AMW-01 (80-80.5)	09-May-22 15:00	17-May-22 09:04	HDPE Jar, 6 oz
2205141-02	AMW-04 (1-2)	11-May-22 13:10	17-May-22 09:04	HDPE Jar, 6 oz
2205141-03	AMW-04 (69-70)	11-May-22 14:50	17-May-22 09:04	HDPE Jar, 6 oz
2205141-04	AMW-05 (1-2)	12-May-22 09:45	17-May-22 09:04	HDPE Jar, 6 oz
2205141-05	ASB-01 (1-2)	12-May-22 10:15	17-May-22 09:04	HDPE Jar, 6 oz
2205141-06	AMW-05 (65-67)	12-May-22 11:20	17-May-22 09:04	HDPE Jar, 6 oz
2205141-07	AMW-03 (1-2)	13-May-22 07:45	17-May-22 09:04	HDPE Jar, 6 oz
2205141-08	AMW-03 (35-37)	13-May-22 09:05	17-May-22 09:04	HDPE Jar, 6 oz
2205141-09	AMW-03 (68-70)	13-May-22 12:30	17-May-22 09:04	HDPE Jar, 6 oz
2205141-10	AMW-03 (68-70) Dup	13-May-22 12:30	17-May-22 09:04	HDPE Jar, 6 oz
2205141-11	Decon water (PFAS Free)	10-May-22 10:20	17-May-22 09:04	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2205141-12	Decon water (Tap)	11-May-22 10:15	17-May-22 09:04	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2205141-13	EB-051122	11-May-22 16:15	17-May-22 09:04	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2205141-14	Well #4	12-May-22 11:30	17-May-22 09:04	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2205141-15	FB-051322	13-May-22 14:00	17-May-22 09:04	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL



ANALYTICAL RESULTS

Sample ID: Method Blank — **PFAS Isotope Dilution Method**

Client Data
Name: AECOM
Project: CVRA
Matrix: Solid

Laboratory Data
Lab Sample: B22E216-BLK1
Column: BEH C18

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFHxS	355-46-4	<0.308	0.308	0.500		B22E216	26-May-22	1.00 g	01-Jun-22 18:47	1
PFOS	1763-23-1	<0.648	0.648	1.00		B22E216	26-May-22	1.00 g	01-Jun-22 18:47	1
EtFOSA	4151-50-2	<0.776	0.776	1.00		B22E216	26-May-22	1.00 g	01-Jun-22 18:47	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFHxS	IS	82.7	25 - 150		B22E216	26-May-22	1.00 g	01-Jun-22 18:47	1
13C8-PFOS	IS	87.3	25 - 150		B22E216	26-May-22	1.00 g	01-Jun-22 18:47	1
d5-EtFOSA	IS	5.00	10 - 150	H	B22E216	26-May-22	1.00 g	01-Jun-22 18:47	1

MDL - Method Detection Limit
RL - Reporting limit
The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to MDL.
When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: OPR **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA

Matrix: Solid

Laboratory Data

Lab Sample: B22E216-BS1 Column: BEH C18

Analyte	CAS Number	Amt Found (ng/g)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFHxS	355-46-4	1.15	1.00	115	50 - 150		B22E216	26-May-22	1.00 g	01-Jun-22 18:58	1
PFOS	1763-23-1	0.997	1.00	99.7	50 - 150	J	B22E216	26-May-22	1.00 g	01-Jun-22 18:58	1
EtFOSA	4151-50-2	0.631	1.00	63.1	50 - 150	J	B22E216	26-May-22	1.00 g	01-Jun-22 18:58	1
Labeled Standards		**Type**		**% Rec**	**Limits**	**Qualifiers**	**Batch**	**Extracted**	**Samp Size**	**Analyzed**	**Dilution**
13C3-PFHxS		IS		111	25 - 150		B22E216	26-May-22	1.00 g	01-Jun-22 18:58	1
13C8-PFOS		IS		111	25 - 150		B22E216	26-May-22	1.00 g	01-Jun-22 18:58	1
d5-EtFOSA		IS		5.70	10 - 150	H	B22E216	26-May-22	1.00 g	01-Jun-22 18:58	1

Sample ID: Method Blank — **PFAS Isotope Dilution Method**

Client Data
Name: AECOM
Project: CVRA
Matrix: Solid

Laboratory Data
Lab Sample: B22F021-BLK1
Column: BEH C18

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	<0.460	0.460	0.500		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
PFPeA	2706-90-3	<0.368	0.368	0.500		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
PFBS	375-73-5	<0.306	0.306	0.500		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
4:2 FTS	757124-72-4	<0.644	0.644	1.00		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
PFHxA	307-24-4	<0.320	0.320	0.500		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
PFPeS	2706-91-4	<0.300	0.300	0.500		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
HFPO-DA	13252-13-6	<0.868	0.868	1.00		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
PFHpA	375-85-9	<0.486	0.486	0.500		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
ADONA	919005-14-4	<0.252	0.252	0.500		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
6:2 FTS	27619-97-2	<0.518	0.518	1.00		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
PFOA	335-67-1	<0.270	0.270	0.500		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
PFHpS	375-92-8	<0.516	0.516	1.00		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
PFNA	375-95-1	<0.372	0.372	0.500		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
PFOSA	754-91-6	<0.572	0.572	1.00		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
9Cl-PF3ONS	756426-58-1	<0.328	0.328	0.500		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
PFDA	335-76-2	<0.442	0.442	0.500		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
8:2 FTS	39108-34-4	<0.588	0.588	1.00		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
PFNS	68259-12-1	<0.828	0.828	1.00		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
MeFOSAA	2355-31-9	<0.404	0.404	0.500		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
EtFOSAA	2991-50-6	<0.380	0.380	0.500		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
PFUnA	2058-94-8	<0.506	0.506	1.00		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
PFDS	335-77-3	<0.242	0.242	0.500		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
11Cl-PF3OUdS	763051-92-9	<0.532	0.532	1.00		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
PFDoA	307-55-1	<0.456	0.456	0.500		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
MeFOSA	31506-32-8	<1.34	1.34	1.50		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
PFTrDA	72629-94-8	<0.406	0.406	0.500		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
PFDoS	79780-39-5	<0.422	0.422	0.500		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
PFTeDA	376-06-7	<0.428	0.428	0.500		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
MeFOSE	24448-09-7	<0.620	0.620	1.00		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
EtFOSE	1691-99-2	<0.736	0.736	1.00		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	104	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
13C3-PFPeA	IS	82.6	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
13C3-PFBS	IS	87.6	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
13C2-4:2 FTS	IS	82.8	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
13C2-PFHxA	IS	84.2	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
13C3-HFPO-DA	IS	88.8	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
13C4-PFHpA	IS	85.8	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1

Sample ID: Method Blank — **PFAS Isotope Dilution Method**

Client Data
Name: AECOM
Project: CVRA
Matrix: Solid

Laboratory Data
Lab Sample: B22F021-BLK1
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-6:2 FTS	IS	72.9	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
13C2-PFOA	IS	90.8	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
13C5-PFNA	IS	75.2	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
13C8-PFOSA	IS	40.6	10 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
13C2-PFDA	IS	72.8	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
13C2-8:2 FTS	IS	80.3	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
d3-MeFOSAA	IS	59.9	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
d5-EtFOSAA	IS	63.0	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
13C2-PFUnA	IS	54.4	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
13C2-PFDoA	IS	54.3	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
d3-MeFOSA	IS	10.1	10 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
13C2-PFTeDA	IS	64.4	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
d7-MeFOSE	IS	26.4	10 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1
d9-EtFOSE	IS	25.9	10 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:26	1

MDL - Method Detection Limit
RL - Reporting limit

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to MDL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: OPR **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA
Matrix: Solid

Laboratory Data

Lab Sample: B22F021-BS1
Column: BEH C18

Analyte	CAS Number	Amt Found (ng/g)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	0.994	1.00	99.4	50 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
PFPeA	2706-90-3	0.917	1.00	91.7	50 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
PFBS	375-73-5	0.784	1.00	78.4	50 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
4:2 FTS	757124-72-4	0.953	1.00	95.3	50 - 150	J, Q	B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
PFHxA	307-24-4	1.04	1.00	104	50 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
PFPeS	2706-91-4	0.900	1.00	90.0	50 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
HFPO-DA	13252-13-6	1.18	1.00	118	50 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
PFHpA	375-85-9	1.00	1.00	100	50 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
ADONA	919005-14-4	0.915	1.00	91.5	50 - 150	Q	B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
6:2 FTS	27619-97-2	0.962	1.00	96.2	50 - 150	J	B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
PFOA	335-67-1	1.01	1.00	101	50 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
PFHpS	375-92-8	1.06	1.00	106	50 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
PFNA	375-95-1	0.966	1.00	96.6	50 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
PFOSA	754-91-6	1.03	1.00	103	50 - 150	Q	B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
9Cl-PF3ONS	756426-58-1	0.881	1.00	88.1	50 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
PFDA	335-76-2	0.943	1.00	94.3	50 - 150	Q	B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
8:2 FTS	39108-34-4	0.685	1.00	68.5	50 - 150	J, Q	B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
PFNS	68259-12-1	0.804	1.00	80.4	50 - 150	J	B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
MeFOSAA	2355-31-9	0.877	1.00	87.7	50 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
EtFOSAA	2991-50-6	0.851	1.00	85.1	50 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
PFUnA	2058-94-8	1.22	1.00	122	50 - 150	Q	B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
PFDS	335-77-3	0.983	1.00	98.3	50 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
11Cl-PF3OUdS	763051-92-9	1.33	1.00	133	50 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
PFDoA	307-55-1	0.923	1.00	92.3	50 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
MeFOSA	31506-32-8	1.06	1.00	106	50 - 150	J, Q	B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
PFTrDA	72629-94-8	1.07	1.00	107	50 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
PFDoS	79780-39-5	0.919	1.00	91.9	50 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
PFTeDA	376-06-7	1.00	1.00	100	50 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
MeFOSE	24448-09-7	1.40	1.00	140	50 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
EtFOSE	1691-99-2	1.07	1.00	107	50 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	103	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
13C3-PFPeA	IS	79.7	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
13C3-PFBS	IS	84.6	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1

Sample ID: OPR **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA

Matrix: Solid

Laboratory Data

Lab Sample: B22F021-BS1

Column: BEH C18

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	80.7	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
13C2-PFHxA	IS	74.4	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
13C3-HFPO-DA	IS	75.7	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
13C4-PFHpA	IS	82.3	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
13C2-6:2 FTS	IS	71.7	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
13C2-PFOA	IS	79.0	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
13C5-PFNA	IS	69.4	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
13C8-PFOSA	IS	34.6	10 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
13C2-PFDA	IS	76.2	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
13C2-8:2 FTS	IS	86.2	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
d3-MeFOSAA	IS	63.1	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
d5-EtFOSAA	IS	57.5	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
13C2-PFUnA	IS	48.1	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
13C2-PFDoA	IS	54.3	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
d3-MeFOSA	IS	6.80	10 - 150	H	B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
13C2-PFTeDA	IS	63.3	25 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
d7-MeFOSE	IS	23.9	10 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1
d9-EtFOSE	IS	23.9	10 - 150		B22F021	06-Jun-22	1.00 g	22-Jun-22 16:36	1

Sample ID: AMW-01 (80-80.5) **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2205141-01	Column:	BEH C18
Project:	CVRA	Date Collected:	09-May-22 15:00	Date Received:	17-May-22 09:04		
				% Solids:	89.7		

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	<0.458	0.458	0.498		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
PFPeA	2706-90-3	<0.366	0.366	0.498		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
PFBS	375-73-5	<0.305	0.305	0.498		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
4:2 FTS	757124-72-4	<0.641	0.641	0.995		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
PFHxA	307-24-4	<0.318	0.318	0.498		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
PFPeS	2706-91-4	<0.299	0.299	0.498		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
HFPO-DA	13252-13-6	<0.864	0.864	0.995		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
PFHpA	375-85-9	<0.484	0.484	0.498		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
ADONA	919005-14-4	<0.251	0.251	0.498		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
PFHxS	355-46-4	<0.309	0.309	0.502		B22E216	26-May-22	1.11 g	01-Jun-22 20:22	1
6:2 FTS	27619-97-2	<0.516	0.516	0.995		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
PFOA	335-67-1	<0.269	0.269	0.498		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
PFHpS	375-92-8	<0.514	0.514	0.995		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
PFNA	375-95-1	<0.370	0.370	0.498		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
PFOSA	754-91-6	<0.569	0.569	0.995		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
PFOS	1763-23-1	<0.651	0.651	1.00		B22E216	26-May-22	1.11 g	01-Jun-22 20:22	1
9Cl-PF3ONS	756426-58-1	<0.326	0.326	0.498		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
PFDA	335-76-2	<0.440	0.440	0.498		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
8:2 FTS	39108-34-4	<0.585	0.585	0.995		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
PFNS	68259-12-1	<0.824	0.824	0.995		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
MeFOSAA	2355-31-9	<0.402	0.402	0.498		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
EtFOSAA	2991-50-6	<0.378	0.378	0.498		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
PFUnA	2058-94-8	<0.504	0.504	0.995		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
PFDS	335-77-3	<0.241	0.241	0.498		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
11Cl-PF3OUdS	763051-92-9	<0.529	0.529	0.995		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
PFDoA	307-55-1	<0.454	0.454	0.498		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
MeFOSA	31506-32-8	<1.33	1.33	1.49		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
PFTrDA	72629-94-8	<0.404	0.404	0.498		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
PFDoS	79780-39-5	<0.420	0.420	0.498		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
PFTeDA	376-06-7	<0.426	0.426	0.498		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
EtFOSA	4151-50-2	<0.779	0.779	1.00		B22E216	26-May-22	1.11 g	01-Jun-22 20:22	1
MeFOSE	24448-09-7	<0.617	0.617	0.995		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
EtFOSE	1691-99-2	<0.733	0.733	0.995		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	99.7	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
13C3-PFPeA	IS	76.6	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
13C3-PFBS	IS	77.8	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1

Sample ID: AMW-01 (80-80.5) — **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA
Matrix: Soil
Date Collected: 09-May-22 15:00

Laboratory Data

Lab Sample: 2205141-01
Date Received: 17-May-22 09:04
% Solids: 89.7
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	76.4	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
13C2-PFHxA	IS	73.5	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
13C3-HFPO-DA	IS	75.1	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
13C4-PFHpA	IS	76.7	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
13C3-PFHxS	IS	79.0	25 - 150		B22E216	26-May-22	1.11 g	01-Jun-22 20:22	1
13C2-6:2 FTS	IS	71.6	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
13C2-PFOA	IS	85.7	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
13C5-PFNA	IS	66.1	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
13C8-PFOSA	IS	42.7	10 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
13C8-PFOS	IS	78.1	25 - 150		B22E216	26-May-22	1.11 g	01-Jun-22 20:22	1
13C2-PFDA	IS	60.4	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
13C2-8:2 FTS	IS	80.0	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
d3-MeFOSAA	IS	50.4	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
d5-EtFOSAA	IS	51.6	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
13C2-PFUnA	IS	66.1	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
13C2-PFDoA	IS	60.1	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
d3-MeFOSA	IS	7.70	10 - 150	H	B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
13C2-PFTeDA	IS	60.2	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
d5-EtFOSA	IS	2.30	10 - 150	H	B22E216	26-May-22	1.11 g	01-Jun-22 20:22	1
d7-MeFOSE	IS	29.7	10 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1
d9-EtFOSE	IS	28.3	10 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 18:17	1

MDL - Method Detection Limit
RL - Reporting limit

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to MDL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: AMW-04 (1-2) **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2205141-02	Column:	BEH C18
Project:	CVRA	Date Collected:	11-May-22 13:10	Date Received:	17-May-22 09:04		
				% Solids:	94.6		

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	<0.450	0.450	0.490		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
PFPeA	2706-90-3	<0.360	0.360	0.490		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
PFBS	375-73-5	<0.300	0.300	0.490		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
4:2 FTS	757124-72-4	<0.630	0.630	0.979		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
PFHxA	307-24-4	<0.313	0.313	0.490		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
PFPeS	2706-91-4	<0.294	0.294	0.490		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
HFPO-DA	13252-13-6	<0.850	0.850	0.979		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
PFHpA	375-85-9	<0.476	0.476	0.490		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
ADONA	919005-14-4	<0.247	0.247	0.490		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
PFHxS	355-46-4	<0.302	0.302	0.490		B22E216	26-May-22	1.08 g	01-Jun-22 20:33	1
6:2 FTS	27619-97-2	<0.507	0.507	0.979		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
PFOA	335-67-1	<0.264	0.264	0.490		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
PFHpS	375-92-8	<0.505	0.505	0.979		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
PFNA	375-95-1	<0.364	0.364	0.490		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
PFOSA	754-91-6	<0.560	0.560	0.979		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
PFOS	1763-23-1	<0.634	0.634	0.979		B22E216	26-May-22	1.08 g	01-Jun-22 20:33	1
9Cl-PF3ONS	756426-58-1	<0.321	0.321	0.490		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
PFDA	335-76-2	<0.433	0.433	0.490		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
8:2 FTS	39108-34-4	<0.576	0.576	0.979		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
PFNS	68259-12-1	<0.811	0.811	0.979		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
MeFOSAA	2355-31-9	<0.396	0.396	0.490		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
EtFOSAA	2991-50-6	<0.372	0.372	0.490		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
PFUnA	2058-94-8	<0.495	0.495	0.979		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
PFDS	335-77-3	<0.237	0.237	0.490		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
11Cl-PF3OUdS	763051-92-9	<0.521	0.521	0.979		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
PFDoA	307-55-1	<0.446	0.446	0.490		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
MeFOSA	31506-32-8	<1.31	1.31	1.47		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
PFTrDA	72629-94-8	<0.397	0.397	0.490		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
PFDoS	79780-39-5	<0.413	0.413	0.490		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
PFTeDA	376-06-7	<0.419	0.419	0.490		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
EtFOSA	4151-50-2	<0.760	0.760	0.979		B22E216	26-May-22	1.08 g	01-Jun-22 20:33	1
MeFOSE	24448-09-7	<0.607	0.607	0.979		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
EtFOSE	1691-99-2	<0.721	0.721	0.979		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	107	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
13C3-PFPeA	IS	81.3	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
13C3-PFBS	IS	79.2	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1

Sample ID: AMW-04 (1-2) **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2205141-02	Column:	BEH C18
Project:	CVRA	Date Collected:	11-May-22 13:10	Date Received:	17-May-22 09:04		
				% Solids:	94.6		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	78.8	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
13C2-PFHxA	IS	76.6	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
13C3-HFPO-DA	IS	76.5	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
13C4-PFHpA	IS	78.6	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
13C3-PFHxS	IS	90.0	25 - 150		B22E216	26-May-22	1.08 g	01-Jun-22 20:33	1
13C2-6:2 FTS	IS	81.5	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
13C2-PFOA	IS	89.4	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
13C5-PFNA	IS	68.9	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
13C8-PFOSA	IS	45.9	10 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
13C8-PFOS	IS	79.2	25 - 150		B22E216	26-May-22	1.08 g	01-Jun-22 20:33	1
13C2-PFDA	IS	71.2	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
13C2-8:2 FTS	IS	81.5	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
d3-MeFOSAA	IS	68.0	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
d5-EtFOSAA	IS	65.1	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
13C2-PFUnA	IS	78.0	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
13C2-PFDoA	IS	71.0	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
d3-MeFOSA	IS	16.9	10 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
13C2-PFTeDA	IS	53.1	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
d5-EtFOSA	IS	14.4	10 - 150		B22E216	26-May-22	1.08 g	01-Jun-22 20:33	1
d7-MeFOSE	IS	32.3	10 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1
d9-EtFOSE	IS	33.7	10 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 18:27	1

MDL - Method Detection Limit RL - Reporting limit

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to MDL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: AMW-04 (69-70) **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA
Matrix: Soil
Date Collected: 11-May-22 14:50

Laboratory Data

Lab Sample: 2205141-03
Date Received: 17-May-22 09:04
% Solids: 88.2
Column: BEH C18

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	<0.449	0.449	0.488		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
PFPeA	2706-90-3	<0.359	0.359	0.488		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
PFBS	375-73-5	<0.299	0.299	0.488		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
4:2 FTS	757124-72-4	<0.629	0.629	0.977		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
PFHxA	307-24-4	<0.313	0.313	0.488		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
PFPeS	2706-91-4	<0.293	0.293	0.488		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
HFPO-DA	13252-13-6	<0.848	0.848	0.977		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
PFHpA	375-85-9	<0.475	0.475	0.488		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
ADONA	919005-14-4	<0.246	0.246	0.488		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
PFHxS	355-46-4	<0.306	0.306	0.497		B22E216	26-May-22	1.14 g	01-Jun-22 20:43	1
6:2 FTS	27619-97-2	<0.506	0.506	0.977		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
PFOA	335-67-1	<0.264	0.264	0.488		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
PFHpS	375-92-8	<0.504	0.504	0.977		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
PFNA	375-95-1	<0.363	0.363	0.488		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
PFOSA	754-91-6	<0.559	0.559	0.977		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
PFOS	1763-23-1	<0.644	0.644	0.994		B22E216	26-May-22	1.14 g	01-Jun-22 20:43	1
9Cl-PF3ONS	756426-58-1	<0.320	0.320	0.488		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
PFDA	335-76-2	<0.432	0.432	0.488		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
8:2 FTS	39108-34-4	<0.574	0.574	0.977		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
PFNS	68259-12-1	<0.809	0.809	0.977		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
MeFOSAA	2355-31-9	<0.395	0.395	0.488		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
EtFOSAA	2991-50-6	<0.371	0.371	0.488		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
PFUnA	2058-94-8	<0.494	0.494	0.977		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
PFDS	335-77-3	<0.236	0.236	0.488		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
11Cl-PF3OUdS	763051-92-9	<0.520	0.520	0.977		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
PFDoA	307-55-1	<0.445	0.445	0.488		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
MeFOSA	31506-32-8	<1.31	1.31	1.47		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
PFTrDA	72629-94-8	<0.397	0.397	0.488		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
PFDoS	79780-39-5	<0.412	0.412	0.488		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
PFTeDA	376-06-7	<0.418	0.418	0.488		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
EtFOSA	4151-50-2	<0.771	0.771	0.994		B22E216	26-May-22	1.14 g	01-Jun-22 20:43	1
MeFOSE	24448-09-7	<0.606	0.606	0.977		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
EtFOSE	1691-99-2	<0.719	0.719	0.977		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	97.0	25 - 150		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
13C3-PFPeA	IS	81.6	25 - 150		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
13C3-PFBS	IS	78.1	25 - 150		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1

Sample ID: AMW-04 (69-70) **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2205141-03	Column:	BEH C18
Project:	CVRA	Date Collected:	11-May-22 14:50	Date Received:	17-May-22 09:04		
				% Solids:	88.2		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	77.3	25 - 150		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
13C2-PFHxA	IS	73.0	25 - 150		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
13C3-HFPO-DA	IS	75.5	25 - 150		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
13C4-PFHpA	IS	71.3	25 - 150		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
13C3-PFHxS	IS	81.5	25 - 150		B22E216	26-May-22	1.14 g	01-Jun-22 20:43	1
13C2-6:2 FTS	IS	73.8	25 - 150		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
13C2-PFOA	IS	86.8	25 - 150		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
13C5-PFNA	IS	68.6	25 - 150		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
13C8-PFOSA	IS	35.7	10 - 150		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
13C8-PFOS	IS	74.3	25 - 150		B22E216	26-May-22	1.14 g	01-Jun-22 20:43	1
13C2-PFDA	IS	61.6	25 - 150		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
13C2-8:2 FTS	IS	66.2	25 - 150		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
d3-MeFOSAA	IS	51.5	25 - 150		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
d5-EtFOSAA	IS	54.4	25 - 150		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
13C2-PFUnA	IS	62.8	25 - 150		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
13C2-PFDoA	IS	59.8	25 - 150		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
d3-MeFOSA	IS	9.60	10 - 150	H	B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
13C2-PFTeDA	IS	49.8	25 - 150		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
d5-EtFOSA	IS	12.6	10 - 150		B22E216	26-May-22	1.14 g	01-Jun-22 20:43	1
d7-MeFOSE	IS	23.5	10 - 150		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1
d9-EtFOSE	IS	19.8	10 - 150		B22F021	06-Jun-22	1.16 g	10-Jun-22 18:38	1

MDL - Method Detection Limit RL - Reporting limit

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to MDL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: AMW-05 (1-2) **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2205141-04	Column:	BEH C18
Project:	CVRA	Date Collected:	12-May-22 09:45	Date Received:	17-May-22 09:04		
				% Solids:	91.8		

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	<0.440	0.440	0.478		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
PFPeA	2706-90-3	<0.352	0.352	0.478		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
PFBS	375-73-5	<0.292	0.292	0.478		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
4:2 FTS	757124-72-4	<0.615	0.615	0.956		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
PFHxA	307-24-4	<0.306	0.306	0.478		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
PFPeS	2706-91-4	<0.287	0.287	0.478		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
HFPO-DA	13252-13-6	<0.830	0.830	0.956		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
PFHpA	375-85-9	<0.464	0.464	0.478		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
ADONA	919005-14-4	<0.241	0.241	0.478		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
PFHxS	355-46-4	<0.305	0.305	0.495		B22E216	26-May-22	1.10 g	01-Jun-22 21:25	1
6:2 FTS	27619-97-2	<0.495	0.495	0.956		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
PFOA	335-67-1	<0.258	0.258	0.478		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
PFHpS	375-92-8	<0.493	0.493	0.956		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
PFNA	375-95-1	<0.356	0.356	0.478		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
PFOSA	754-91-6	<0.547	0.547	0.956		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
PFOS	1763-23-1	2.41	0.642	0.990		B22E216	26-May-22	1.10 g	01-Jun-22 21:25	1
9Cl-PF3ONS	756426-58-1	<0.313	0.313	0.478		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
PFDA	335-76-2	<0.422	0.422	0.478		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
8:2 FTS	39108-34-4	<0.562	0.562	0.956		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
PFNS	68259-12-1	<0.791	0.791	0.956		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
MeFOSAA	2355-31-9	<0.386	0.386	0.478		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
EtFOSAA	2991-50-6	<0.363	0.363	0.478		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
PFUnA	2058-94-8	<0.484	0.484	0.956		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
PFDS	335-77-3	<0.231	0.231	0.478		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
11Cl-PF3OUdS	763051-92-9	<0.508	0.508	0.956		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
PFDoA	307-55-1	<0.436	0.436	0.478		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
MeFOSA	31506-32-8	<1.28	1.28	1.43		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
PFTrDA	72629-94-8	<0.388	0.388	0.478		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
PFDoS	79780-39-5	<0.403	0.403	0.478		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
PFTeDA	376-06-7	<0.409	0.409	0.478		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
EtFOSA	4151-50-2	<0.769	0.769	0.990		B22E216	26-May-22	1.10 g	01-Jun-22 21:25	1
MeFOSE	24448-09-7	<0.593	0.593	0.956		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
EtFOSE	1691-99-2	<0.703	0.703	0.956		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	109	25 - 150		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
13C3-PFPeA	IS	86.6	25 - 150		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
13C3-PFBS	IS	88.8	25 - 150		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1

Sample ID: AMW-05 (1-2) **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2205141-04	Column:	BEH C18
Project:	CVRA	Date Collected:	12-May-22 09:45	Date Received:	17-May-22 09:04		
				% Solids:	91.8		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	87.3	25 - 150		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
13C2-PFHxA	IS	85.4	25 - 150		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
13C3-HFPO-DA	IS	78.2	25 - 150		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
13C4-PFHpA	IS	82.3	25 - 150		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
13C3-PFHxS	IS	82.7	25 - 150		B22E216	26-May-22	1.10 g	01-Jun-22 21:25	1
13C2-6:2 FTS	IS	99.0	25 - 150		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
13C2-PFOA	IS	92.6	25 - 150		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
13C5-PFNA	IS	69.8	25 - 150		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
13C8-PFOSA	IS	54.4	10 - 150		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
13C8-PFOS	IS	81.7	25 - 150		B22E216	26-May-22	1.10 g	01-Jun-22 21:25	1
13C2-PFDA	IS	72.6	25 - 150		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
13C2-8:2 FTS	IS	89.8	25 - 150		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
d3-MeFOSAA	IS	71.1	25 - 150		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
d5-EtFOSAA	IS	71.4	25 - 150		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
13C2-PFUnA	IS	85.2	25 - 150		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
13C2-PFDoA	IS	73.8	25 - 150		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
d3-MeFOSA	IS	18.3	10 - 150		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
13C2-PFTeDA	IS	53.8	25 - 150		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
d5-EtFOSA	IS	18.9	10 - 150		B22E216	26-May-22	1.10 g	01-Jun-22 21:25	1
d7-MeFOSE	IS	42.4	10 - 150		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1
d9-EtFOSE	IS	43.5	10 - 150		B22F021	06-Jun-22	1.14 g	10-Jun-22 19:20	1

MDL - Method Detection Limit RL - Reporting limit

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to MDL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: ASB-01 (1-2) — **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2205141-05	Column:	BEH C18
Project:	CVRA	Date Collected:	12-May-22 10:15	Date Received:	17-May-22 09:04		
				% Solids:	93.6		

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	<0.455	0.455	0.495		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
PFPeA	2706-90-3	<0.364	0.364	0.495		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
PFBS	375-73-5	<0.303	0.303	0.495		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
4:2 FTS	757124-72-4	<0.637	0.637	0.990		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
PFHxA	307-24-4	<0.317	0.317	0.495		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
PFPeS	2706-91-4	<0.297	0.297	0.495		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
HFPO-DA	13252-13-6	<0.859	0.859	0.990		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
PFHpA	375-85-9	<0.481	0.481	0.495		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
ADONA	919005-14-4	<0.249	0.249	0.495		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
PFHxS	355-46-4	<0.302	0.302	0.490		B22E216	26-May-22	1.09 g	01-Jun-22 21:36	1
6:2 FTS	27619-97-2	<0.513	0.513	0.990		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
PFOA	335-67-1	<0.267	0.267	0.495		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
PFHpS	375-92-8	<0.511	0.511	0.990		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
PFNA	375-95-1	<0.368	0.368	0.495		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
PFOSA	754-91-6	<0.566	0.566	0.990		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
PFOS	1763-23-1	<0.635	0.635	0.981		B22E216	26-May-22	1.09 g	01-Jun-22 21:36	1
9Cl-PF3ONS	756426-58-1	<0.325	0.325	0.495		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
PFDA	335-76-2	<0.437	0.437	0.495		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
8:2 FTS	39108-34-4	<0.582	0.582	0.990		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
PFNS	68259-12-1	<0.819	0.819	0.990		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
MeFOSAA	2355-31-9	<0.400	0.400	0.495		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
EtFOSAA	2991-50-6	<0.376	0.376	0.495		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
PFUnA	2058-94-8	<0.501	0.501	0.990		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
PFDS	335-77-3	<0.240	0.240	0.495		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
11Cl-PF3OUdS	763051-92-9	<0.527	0.527	0.990		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
PFDoA	307-55-1	<0.451	0.451	0.495		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
MeFOSA	31506-32-8	<1.32	1.32	1.48		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
PFTrDA	72629-94-8	<0.402	0.402	0.495		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
PFDoS	79780-39-5	<0.418	0.418	0.495		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
PFTeDA	376-06-7	<0.424	0.424	0.495		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
EtFOSA	4151-50-2	<0.761	0.761	0.981		B22E216	26-May-22	1.09 g	01-Jun-22 21:36	1
MeFOSE	24448-09-7	<0.614	0.614	0.990		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
EtFOSE	1691-99-2	<0.728	0.728	0.990		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	99.9	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
13C3-PFPeA	IS	79.9	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
13C3-PFBS	IS	77.8	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1

Sample ID: ASB-01 (1-2) **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2205141-05	Column:	BEH C18
Project:	CVRA	Date Collected:	12-May-22 10:15	Date Received:	17-May-22 09:04		
				% Solids:	93.6		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	82.4	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
13C2-PFHxA	IS	76.1	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
13C3-HFPO-DA	IS	69.4	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
13C4-PFHpA	IS	76.3	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
13C3-PFHxS	IS	76.1	25 - 150		B22E216	26-May-22	1.09 g	01-Jun-22 21:36	1
13C2-6:2 FTS	IS	79.5	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
13C2-PFOA	IS	81.0	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
13C5-PFNA	IS	67.6	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
13C8-PFOSA	IS	49.9	10 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
13C8-PFOS	IS	68.2	25 - 150		B22E216	26-May-22	1.09 g	01-Jun-22 21:36	1
13C2-PFDA	IS	69.0	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
13C2-8:2 FTS	IS	74.7	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
d3-MeFOSAA	IS	67.2	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
d5-EtFOSAA	IS	67.1	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
13C2-PFUnA	IS	75.8	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
13C2-PFDoA	IS	65.5	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
d3-MeFOSA	IS	23.9	10 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
13C2-PFTeDA	IS	65.4	25 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
d5-EtFOSA	IS	13.9	10 - 150		B22E216	26-May-22	1.09 g	01-Jun-22 21:36	1
d7-MeFOSE	IS	42.1	10 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1
d9-EtFOSE	IS	38.5	10 - 150		B22F021	06-Jun-22	1.08 g	10-Jun-22 19:30	1

MDL - Method Detection Limit RL - Reporting limit

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to MDL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: AMW-05 (65-67) **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2205141-06	Column:	BEH C18
Project:	CVRA	Date Collected:	12-May-22 11:20	Date Received:	17-May-22 09:04		
				% Solids:	98.2		

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	<0.455	0.455	0.494		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
PFPeA	2706-90-3	<0.364	0.364	0.494		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
PFBS	375-73-5	<0.303	0.303	0.494		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
4:2 FTS	757124-72-4	<0.637	0.637	0.989		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
PFHxA	307-24-4	<0.316	0.316	0.494		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
PFPeS	2706-91-4	<0.297	0.297	0.494		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
HFPO-DA	13252-13-6	<0.858	0.858	0.989		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
PFHpA	375-85-9	<0.481	0.481	0.494		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
ADONA	919005-14-4	<0.249	0.249	0.494		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
PFHxS	355-46-4	<0.299	0.299	0.485		B22E216	26-May-22	1.05 g	01-Jun-22 21:46	1
6:2 FTS	27619-97-2	<0.512	0.512	0.989		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
PFOA	335-67-1	<0.267	0.267	0.494		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
PFHpS	375-92-8	<0.510	0.510	0.989		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
PFNA	375-95-1	<0.368	0.368	0.494		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
PFOSA	754-91-6	<0.566	0.566	0.989		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
PFOS	1763-23-1	1.74	0.629	0.970		B22E216	26-May-22	1.05 g	01-Jun-22 21:46	1
9Cl-PF3ONS	756426-58-1	<0.324	0.324	0.494		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
PFDA	335-76-2	<0.437	0.437	0.494		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
8:2 FTS	39108-34-4	<0.581	0.581	0.989		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
PFNS	68259-12-1	<0.819	0.819	0.989		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
MeFOSAA	2355-31-9	<0.399	0.399	0.494		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
EtFOSAA	2991-50-6	<0.376	0.376	0.494		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
PFUnA	2058-94-8	<0.500	0.500	0.989		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
PFDS	335-77-3	<0.239	0.239	0.494		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
11Cl-PF3OUdS	763051-92-9	<0.526	0.526	0.989		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
PFDoA	307-55-1	<0.451	0.451	0.494		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
MeFOSA	31506-32-8	<1.32	1.32	1.48		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
PFTrDA	72629-94-8	<0.401	0.401	0.494		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
PFDoS	79780-39-5	<0.417	0.417	0.494		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
PFTeDA	376-06-7	<0.423	0.423	0.494		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
EtFOSA	4151-50-2	<0.753	0.753	0.970		B22E216	26-May-22	1.05 g	01-Jun-22 21:46	1
MeFOSE	24448-09-7	<0.613	0.613	0.989		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
EtFOSE	1691-99-2	<0.728	0.728	0.989		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	108	25 - 150		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
13C3-PFPeA	IS	85.4	25 - 150		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
13C3-PFBS	IS	84.4	25 - 150		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1

Sample ID: AMW-05 (65-67) **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2205141-06	Column:	BEH C18
Project:	CVRA	Date Collected:	12-May-22 11:20	Date Received:	17-May-22 09:04		
				% Solids:	98.2		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	84.0	25 - 150		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
13C2-PFHxA	IS	80.5	25 - 150		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
13C3-HFPO-DA	IS	74.6	25 - 150		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
13C4-PFHpA	IS	79.5	25 - 150		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
13C3-PFHxS	IS	78.6	25 - 150		B22E216	26-May-22	1.05 g	01-Jun-22 21:46	1
13C2-6:2 FTS	IS	89.1	25 - 150		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
13C2-PFOA	IS	98.9	25 - 150		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
13C5-PFNA	IS	62.0	25 - 150		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
13C8-PFOSA	IS	43.4	10 - 150		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
13C8-PFOS	IS	76.7	25 - 150		B22E216	26-May-22	1.05 g	01-Jun-22 21:46	1
13C2-PFDA	IS	63.8	25 - 150		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
13C2-8:2 FTS	IS	80.5	25 - 150		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
d3-MeFOSAA	IS	62.8	25 - 150		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
d5-EtFOSAA	IS	57.4	25 - 150		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
13C2-PFUnA	IS	66.4	25 - 150		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
13C2-PFDoA	IS	62.1	25 - 150		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
d3-MeFOSA	IS	13.2	10 - 150		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
13C2-PFTeDA	IS	63.5	25 - 150		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
d5-EtFOSA	IS	6.90	10 - 150	H	B22E216	26-May-22	1.05 g	01-Jun-22 21:46	1
d7-MeFOSE	IS	30.4	10 - 150		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1
d9-EtFOSE	IS	29.5	10 - 150		B22F021	06-Jun-22	1.03 g	10-Jun-22 19:41	1

MDL - Method Detection Limit RL - Reporting limit

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to MDL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: AMW-03 (1-2) **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2205141-07	Column:	BEH C18
Project:	CVRA	Date Collected:	13-May-22 07:45	Date Received:	17-May-22 09:04		
				% Solids:	96.0		

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	<0.456	0.456	0.496		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
PFPeA	2706-90-3	<0.365	0.365	0.496		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
PFBS	375-73-5	<0.304	0.304	0.496		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
4:2 FTS	757124-72-4	<0.639	0.639	0.992		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
PFHxA	307-24-4	<0.317	0.317	0.496		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
PFPeS	2706-91-4	<0.298	0.298	0.496		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
HFPO-DA	13252-13-6	<0.861	0.861	0.992		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
PFHpA	375-85-9	<0.482	0.482	0.496		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
ADONA	919005-14-4	<0.250	0.250	0.496		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
PFHxS	355-46-4	<0.308	0.308	0.501		B22E216	26-May-22	1.04 g	01-Jun-22 21:57	1
6:2 FTS	27619-97-2	11.6	0.514	0.992		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
PFOA	335-67-1	0.391	0.268	0.496	J	B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
PFHpS	375-92-8	<0.512	0.512	0.992		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
PFNA	375-95-1	1.78	0.369	0.496		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
PFOSA	754-91-6	<0.567	0.567	0.992		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
PFOS	1763-23-1	31.7	0.649	1.00		B22E216	26-May-22	1.04 g	01-Jun-22 21:57	1
9Cl-PF3ONS	756426-58-1	<0.325	0.325	0.496		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
PFDA	335-76-2	1.37	0.438	0.496		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
8:2 FTS	39108-34-4	23.9	0.583	0.992		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
PFNS	68259-12-1	<0.821	0.821	0.992		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
MeFOSAA	2355-31-9	<0.401	0.401	0.496		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
EtFOSAA	2991-50-6	<0.377	0.377	0.496		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
PFUnA	2058-94-8	<0.502	0.502	0.992		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
PFDS	335-77-3	<0.240	0.240	0.496		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
11Cl-PF3OUdS	763051-92-9	<0.528	0.528	0.992		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
PFDoA	307-55-1	<0.452	0.452	0.496		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
MeFOSA	31506-32-8	<1.33	1.33	1.49		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
PFTrDA	72629-94-8	<0.403	0.403	0.496		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
PFDoS	79780-39-5	<0.419	0.419	0.496		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
PFTeDA	376-06-7	<0.425	0.425	0.496		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
EtFOSA	4151-50-2	2.85	0.777	1.00	Q	B22E216	26-May-22	1.04 g	01-Jun-22 21:57	1
MeFOSE	24448-09-7	<0.615	0.615	0.992		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
EtFOSE	1691-99-2	<0.730	0.730	0.992		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	105	25 - 150		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
13C3-PFPeA	IS	84.2	25 - 150		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
13C3-PFBS	IS	74.1	25 - 150		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1

Sample ID: AMW-03 (1-2) **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2205141-07	Column:	BEH C18
Project:	CVRA	Date Collected:	13-May-22 07:45	Date Received:	17-May-22 09:04		
				% Solids:	96.0		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	79.2	25 - 150		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
13C2-PFHxA	IS	79.3	25 - 150		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
13C3-HFPO-DA	IS	74.6	25 - 150		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
13C4-PFHpA	IS	84.7	25 - 150		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
13C3-PFHxS	IS	84.0	25 - 150		B22E216	26-May-22	1.04 g	01-Jun-22 21:57	1
13C2-6:2 FTS	IS	90.5	25 - 150		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
13C2-PFOA	IS	100	25 - 150		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
13C5-PFNA	IS	73.6	25 - 150		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
13C8-PFOSA	IS	59.5	10 - 150		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
13C8-PFOS	IS	80.9	25 - 150		B22E216	26-May-22	1.04 g	01-Jun-22 21:57	1
13C2-PFDA	IS	65.9	25 - 150		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
13C2-8:2 FTS	IS	80.3	25 - 150		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
d3-MeFOSAA	IS	62.8	25 - 150		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
d5-EtFOSAA	IS	61.6	25 - 150		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
13C2-PFUnA	IS	70.4	25 - 150		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
13C2-PFDoA	IS	67.3	25 - 150		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
d3-MeFOSA	IS	18.5	10 - 150		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
13C2-PFTeDA	IS	75.3	25 - 150		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
d5-EtFOSA	IS	9.50	10 - 150	H	B22E216	26-May-22	1.04 g	01-Jun-22 21:57	1
d7-MeFOSE	IS	35.5	10 - 150		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1
d9-EtFOSE	IS	32.0	10 - 150		B22F021	06-Jun-22	1.05 g	10-Jun-22 19:51	1

MDL - Method Detection Limit RL - Reporting limit

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to MDL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: AMW-03 (35-37) **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA
Matrix: Soil
Date Collected: 13-May-22 09:05

Laboratory Data

Lab Sample: 2205141-08
Date Received: 17-May-22 09:04
% Solids: 98.1
Column: BEH C18

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	<0.442	0.442	0.481		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
PFPeA	2706-90-3	<0.354	0.354	0.481		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
PFBS	375-73-5	<0.294	0.294	0.481		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
4:2 FTS	757124-72-4	<0.619	0.619	0.962		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
PFHxA	307-24-4	<0.308	0.308	0.481		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
PFPeS	2706-91-4	<0.288	0.288	0.481		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
HFPO-DA	13252-13-6	<0.835	0.835	0.962		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
PFHpA	375-85-9	<0.467	0.467	0.481		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
ADONA	919005-14-4	<0.242	0.242	0.481		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
PFHxS	355-46-4	1.14	0.293	0.476		B22E216	26-May-22	1.07 g	01-Jun-22 22:07	1
6:2 FTS	27619-97-2	<0.498	0.498	0.962		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
PFOA	335-67-1	<0.260	0.260	0.481		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
PFHpS	375-92-8	<0.496	0.496	0.962		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
PFNA	375-95-1	<0.358	0.358	0.481		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
PFOSA	754-91-6	<0.550	0.550	0.962		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
PFOS	1763-23-1	2.19	0.617	0.953	Q	B22E216	26-May-22	1.07 g	01-Jun-22 22:07	1
9Cl-PF3ONS	756426-58-1	<0.315	0.315	0.481		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
PFDA	335-76-2	<0.425	0.425	0.481		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
8:2 FTS	39108-34-4	<0.565	0.565	0.962		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
PFNS	68259-12-1	<0.796	0.796	0.962		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
MeFOSAA	2355-31-9	<0.388	0.388	0.481		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
EtFOSAA	2991-50-6	<0.365	0.365	0.481		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
PFUnA	2058-94-8	<0.487	0.487	0.962		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
PFDS	335-77-3	<0.233	0.233	0.481		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
11Cl-PF3OUdS	763051-92-9	<0.512	0.512	0.962		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
PFDoA	307-55-1	<0.438	0.438	0.481		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
MeFOSA	31506-32-8	<1.29	1.29	1.44		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
PFTrDA	72629-94-8	<0.390	0.390	0.481		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
PFDoS	79780-39-5	<0.406	0.406	0.481		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
PFTeDA	376-06-7	<0.412	0.412	0.481		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
EtFOSA	4151-50-2	<0.739	0.739	0.953		B22E216	26-May-22	1.07 g	01-Jun-22 22:07	1
MeFOSE	24448-09-7	<0.596	0.596	0.962		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
EtFOSE	1691-99-2	<0.708	0.708	0.962		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	107	25 - 150		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
13C3-PFPeA	IS	90.0	25 - 150		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
13C3-PFBS	IS	80.9	25 - 150		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1

Sample ID: AMW-03 (35-37) **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2205141-08	Column:	BEH C18
Project:	CVRA	Date Collected:	13-May-22 09:05	Date Received:	17-May-22 09:04		
				% Solids:	98.1		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	77.6	25 - 150		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
13C2-PFHxA	IS	84.8	25 - 150		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
13C3-HFPO-DA	IS	72.9	25 - 150		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
13C4-PFHpA	IS	86.7	25 - 150		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
13C3-PFHxS	IS	86.6	25 - 150		B22E216	26-May-22	1.07 g	01-Jun-22 22:07	1
13C2-6:2 FTS	IS	82.0	25 - 150		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
13C2-PFOA	IS	83.6	25 - 150		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
13C5-PFNA	IS	67.2	25 - 150		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
13C8-PFOSA	IS	42.9	10 - 150		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
13C8-PFOS	IS	76.0	25 - 150		B22E216	26-May-22	1.07 g	01-Jun-22 22:07	1
13C2-PFDA	IS	64.8	25 - 150		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
13C2-8:2 FTS	IS	77.2	25 - 150		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
d3-MeFOSAA	IS	63.2	25 - 150		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
d5-EtFOSAA	IS	63.1	25 - 150		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
13C2-PFUnA	IS	68.3	25 - 150		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
13C2-PFDoA	IS	63.8	25 - 150		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
d3-MeFOSA	IS	10.3	10 - 150		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
13C2-PFTeDA	IS	63.9	25 - 150		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
d5-EtFOSA	IS	2.80	10 - 150	H	B22E216	26-May-22	1.07 g	01-Jun-22 22:07	1
d7-MeFOSE	IS	37.7	10 - 150		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1
d9-EtFOSE	IS	32.8	10 - 150		B22F021	06-Jun-22	1.06 g	10-Jun-22 20:02	1

MDL - Method Detection Limit RL - Reporting limit

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to MDL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: AMW-03 (68-70) **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA
Matrix: Soil
Date Collected: 13-May-22 12:30

Laboratory Data

Lab Sample: 2205141-09
Date Received: 17-May-22 09:04
% Solids: 91.9
Column: BEH C18

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	<0.447	0.447	0.486		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
PFPeA	2706-90-3	<0.357	0.357	0.486		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
PFBS	375-73-5	<0.297	0.297	0.486		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
4:2 FTS	757124-72-4	<0.625	0.625	0.971		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
PFHxA	307-24-4	<0.311	0.311	0.486		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
PFPeS	2706-91-4	<0.291	0.291	0.486		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
HFPO-DA	13252-13-6	<0.843	0.843	0.971		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
PFHpA	375-85-9	<0.472	0.472	0.486		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
ADONA	919005-14-4	<0.245	0.245	0.486		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
PFHxS	355-46-4	0.507	0.296	0.481	Q	B22E216	26-May-22	1.13 g	01-Jun-22 22:18	1
6:2 FTS	27619-97-2	2.31	0.503	0.971		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
PFOA	335-67-1	<0.262	0.262	0.486		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
PFHpS	375-92-8	<0.501	0.501	0.971		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
PFNA	375-95-1	<0.361	0.361	0.486		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
PFOSA	754-91-6	<0.555	0.555	0.971		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
PFOS	1763-23-1	<0.624	0.624	0.962		B22E216	26-May-22	1.13 g	01-Jun-22 22:18	1
9Cl-PF3ONS	756426-58-1	<0.319	0.319	0.486		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
PFDA	335-76-2	<0.429	0.429	0.486		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
8:2 FTS	39108-34-4	<0.571	0.571	0.971		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
PFNS	68259-12-1	<0.804	0.804	0.971		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
MeFOSAA	2355-31-9	<0.392	0.392	0.486		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
EtFOSAA	2991-50-6	<0.369	0.369	0.486		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
PFUnA	2058-94-8	<0.491	0.491	0.971		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
PFDS	335-77-3	<0.235	0.235	0.486		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
11Cl-PF3OUdS	763051-92-9	<0.517	0.517	0.971		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
PFDoA	307-55-1	<0.443	0.443	0.486		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
MeFOSA	31506-32-8	<1.30	1.30	1.46		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
PFTrDA	72629-94-8	<0.394	0.394	0.486		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
PFDoS	79780-39-5	<0.410	0.410	0.486		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
PFTeDA	376-06-7	<0.416	0.416	0.486		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
EtFOSA	4151-50-2	<0.747	0.747	0.962		B22E216	26-May-22	1.13 g	01-Jun-22 22:18	1
MeFOSE	24448-09-7	<0.602	0.602	0.971		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
EtFOSE	1691-99-2	<0.715	0.715	0.971		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	107	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
13C3-PFPeA	IS	85.4	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
13C3-PFBS	IS	80.0	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1

Sample ID: AMW-03 (68-70) **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2205141-09	Column:	BEH C18
Project:	CVRA	Date Collected:	13-May-22 12:30	Date Received:	17-May-22 09:04		
				% Solids:	91.9		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	84.9	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
13C2-PFHxA	IS	82.0	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
13C3-HFPO-DA	IS	80.7	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
13C4-PFHpA	IS	84.8	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
13C3-PFHxS	IS	69.8	25 - 150		B22E216	26-May-22	1.13 g	01-Jun-22 22:18	1
13C2-6:2 FTS	IS	81.0	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
13C2-PFOA	IS	84.1	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
13C5-PFNA	IS	53.6	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
13C8-PFOSA	IS	33.1	10 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
13C8-PFOS	IS	55.3	25 - 150		B22E216	26-May-22	1.13 g	01-Jun-22 22:18	1
13C2-PFDA	IS	54.0	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
13C2-8:2 FTS	IS	81.4	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
d3-MeFOSAA	IS	57.7	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
d5-EtFOSAA	IS	52.7	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
13C2-PFUnA	IS	64.1	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
13C2-PFDoA	IS	68.6	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
d3-MeFOSA	IS	7.90	10 - 150	H	B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
13C2-PFTeDA	IS	60.0	25 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
d5-EtFOSA	IS	2.10	10 - 150	H	B22E216	26-May-22	1.13 g	01-Jun-22 22:18	1
d7-MeFOSE	IS	24.5	10 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1
d9-EtFOSE	IS	23.1	10 - 150		B22F021	06-Jun-22	1.12 g	10-Jun-22 20:12	1

MDL - Method Detection Limit RL - Reporting limit

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to MDL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: AMW-03 (68-70) Dup — **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2205141-10	Column:	BEH C18
Project:	CVRA	Date Collected:	13-May-22 12:30	Date Received:	17-May-22 09:04		
				% Solids:	89.6		

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	<0.439	0.439	0.477		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
PFPeA	2706-90-3	<0.351	0.351	0.477		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
PFBS	375-73-5	<0.292	0.292	0.477		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
4:2 FTS	757124-72-4	<0.614	0.614	0.953		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
PFHxA	307-24-4	<0.305	0.305	0.477		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
PFPeS	2706-91-4	<0.286	0.286	0.477		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
HFPO-DA	13252-13-6	<0.828	0.828	0.953		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
PFHpA	375-85-9	<0.463	0.463	0.477		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
ADONA	919005-14-4	<0.240	0.240	0.477		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
PFHxS	355-46-4	0.333	0.294	0.477	J	B22E216	26-May-22	1.17 g	01-Jun-22 22:28	1
6:2 FTS	27619-97-2	2.39	0.494	0.953		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
PFOA	335-67-1	<0.257	0.257	0.477		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
PFHpS	375-92-8	<0.492	0.492	0.953		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
PFNA	375-95-1	<0.355	0.355	0.477		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
PFOSA	754-91-6	<0.545	0.545	0.953		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
PFOS	1763-23-1	<0.618	0.618	0.953		B22E216	26-May-22	1.17 g	01-Jun-22 22:28	1
9Cl-PF3ONS	756426-58-1	<0.313	0.313	0.477		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
PFDA	335-76-2	<0.421	0.421	0.477		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
8:2 FTS	39108-34-4	<0.561	0.561	0.953		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
PFNS	68259-12-1	<0.789	0.789	0.953		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
MeFOSAA	2355-31-9	<0.385	0.385	0.477		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
EtFOSAA	2991-50-6	<0.362	0.362	0.477		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
PFUnA	2058-94-8	<0.482	0.482	0.953		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
PFDS	335-77-3	<0.231	0.231	0.477		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
11Cl-PF3OUdS	763051-92-9	<0.507	0.507	0.953		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
PFDoA	307-55-1	<0.435	0.435	0.477		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
MeFOSA	31506-32-8	<1.28	1.28	1.43		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
PFTrDA	72629-94-8	<0.387	0.387	0.477		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
PFDoS	79780-39-5	<0.402	0.402	0.477		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
PFTeDA	376-06-7	<0.408	0.408	0.477		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
EtFOSA	4151-50-2	<0.740	0.740	0.953		B22E216	26-May-22	1.17 g	01-Jun-22 22:28	1
MeFOSE	24448-09-7	<0.591	0.591	0.953		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
EtFOSE	1691-99-2	<0.702	0.702	0.953		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	105	25 - 150		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
13C3-PFPeA	IS	85.5	25 - 150		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
13C3-PFBS	IS	71.7	25 - 150		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1

Sample ID: AMW-03 (68-70) Dup — **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2205141-10	Column:	BEH C18
Project:	CVRA	Date Collected:	13-May-22 12:30	Date Received:	17-May-22 09:04		
				% Solids:	89.6		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	81.5	25 - 150		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
13C2-PFHxA	IS	81.5	25 - 150		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
13C3-HFPO-DA	IS	77.7	25 - 150		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
13C4-PFHpA	IS	82.1	25 - 150		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
13C3-PFHxS	IS	78.9	25 - 150		B22E216	26-May-22	1.17 g	01-Jun-22 22:28	1
13C2-6:2 FTS	IS	82.7	25 - 150		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
13C2-PFOA	IS	90.0	25 - 150		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
13C5-PFNA	IS	72.9	25 - 150		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
13C8-PFOSA	IS	42.4	10 - 150		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
13C8-PFOS	IS	56.9	25 - 150		B22E216	26-May-22	1.17 g	01-Jun-22 22:28	1
13C2-PFDA	IS	62.7	25 - 150		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
13C2-8:2 FTS	IS	71.4	25 - 150		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
d3-MeFOSAA	IS	54.3	25 - 150		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
d5-EtFOSAA	IS	54.0	25 - 150		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
13C2-PFUnA	IS	69.6	25 - 150		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
13C2-PFDoA	IS	69.1	25 - 150		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
d3-MeFOSA	IS	5.30	10 - 150	H	B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
13C2-PFTeDA	IS	66.0	25 - 150		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
d5-EtFOSA	IS	2.80	10 - 150	H	B22E216	26-May-22	1.17 g	01-Jun-22 22:28	1
d7-MeFOSE	IS	42.3	10 - 150		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1
d9-EtFOSE	IS	43.4	10 - 150		B22F021	06-Jun-22	1.17 g	10-Jun-22 20:23	1

MDL - Method Detection Limit

RL - Reporting limit

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to MDL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: Method Blank — **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	B22E192-BLK1	Column:	BEH C18
Project:	CVRA						

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	<1.01	1.01	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
PFPeA	2706-90-3	<0.755	0.755	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
PFBS	375-73-5	<0.905	0.905	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
4:2 FTS	757124-72-4	<0.950	0.950	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
PFHxA	307-24-4	<0.815	0.815	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
PFPeS	2706-91-4	<0.820	0.820	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
HFPO-DA	13252-13-6	<1.57	1.57	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
PFHpA	375-85-9	<0.935	0.935	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
ADONA	919005-14-4	<0.640	0.640	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
PFHxS	355-46-4	<1.03	1.03	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
6:2 FTS	27619-97-2	<1.13	1.13	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
PFOA	335-67-1	<0.955	0.955	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
PFHpS	375-92-8	<0.595	0.595	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
PFNA	375-95-1	<0.755	0.755	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
PFOSA	754-91-6	<1.09	1.09	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
PFOS	1763-23-1	<1.13	1.13	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
9Cl-PF3ONS	756426-58-1	<1.07	1.07	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
PFDA	335-76-2	<0.945	0.945	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
8:2 FTS	39108-34-4	<1.14	1.14	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
PFNS	68259-12-1	<1.16	1.16	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
MeFOSAA	2355-31-9	<0.950	0.950	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
EtFOSAA	2991-50-6	<1.04	1.04	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
PFUnA	2058-94-8	<0.755	0.755	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
PFDS	335-77-3	<0.760	0.760	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
11Cl-PF3OUdS	763051-92-9	<0.990	0.990	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
PFDoA	307-55-1	<0.975	0.975	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
MeFOSA	31506-32-8	<2.24	2.24	2.50		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
PFTrDA	72629-94-8	<0.655	0.655	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
PFDoS	79780-39-5	<1.42	1.42	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
PFTeDA	376-06-7	<0.815	0.815	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
EtFOSA	4151-50-2	<2.33	2.33	2.50		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
MeFOSE	24448-09-7	<2.00	2.00	2.50		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
EtFOSE	1691-99-2	<1.57	1.57	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	64.6	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
13C3-PFPeA	IS	72.1	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
13C3-PFBS	IS	87.2	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
13C2-4:2 FTS	IS	78.2	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1

Sample ID: Method Blank **PFAS Isotope Dilution Method**

Client Data
Name: AECOM
Project: CVRA
Matrix: Aqueous

Laboratory Data
Lab Sample: B22E192-BLK1
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	IS	82.9	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
13C3-HFPO-DA	IS	88.8	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
13C4-PFHpA	IS	82.8	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
13C3-PFHxS	IS	83.7	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
13C2-6:2 FTS	IS	80.9	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
13C2-PFOA	IS	80.3	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
13C5-PFNA	IS	79.0	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
13C8-PFOSA	IS	58.1	10 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
13C8-PFOS	IS	81.2	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
13C2-PFDA	IS	83.3	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
13C2-8:2 FTS	IS	77.7	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
d3-MeFOSAA	IS	75.6	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
d5-EtFOSAA	IS	82.0	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
13C2-PFUnA	IS	82.3	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
13C2-PFDoA	IS	84.3	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
d3-MeFOSA	IS	24.8	10 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
13C2-PFTeDA	IS	52.9	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
d5-EtFOSA	IS	24.5	10 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
d7-MeFOSE	IS	40.2	10 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1
d9-EtFOSE	IS	41.5	10 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:39	1

MDL - Method Detection Limit RL - Reporting limit Results reported to MDL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: OPR **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA
Matrix: Aqueous

Laboratory Data

Lab Sample: B22E192-BS1
Column: BEH C18

Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	3.55	4.00	88.9	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
PFPeA	2706-90-3	3.59	4.00	89.8	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
PFBS	375-73-5	3.56	4.00	88.9	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
4:2 FTS	757124-72-4	3.97	4.00	99.3	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
PFHxA	307-24-4	3.57	4.00	89.1	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
PFPeS	2706-91-4	3.14	4.00	78.4	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
HFPO-DA	13252-13-6	4.19	4.00	105	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
PFHpA	375-85-9	3.68	4.00	92.1	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
ADONA	919005-14-4	3.61	4.00	90.2	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
PFHxS	355-46-4	3.21	4.00	80.3	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
6:2 FTS	27619-97-2	3.50	4.00	87.5	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
PFOA	335-67-1	3.71	4.00	92.7	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
PFHpS	375-92-8	4.59	4.00	115	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
PFNA	375-95-1	3.79	4.00	94.7	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
PFOSA	754-91-6	3.63	4.00	90.7	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
PFOS	1763-23-1	3.40	4.00	85.0	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
9Cl-PF3ONS	756426-58-1	3.42	4.00	85.6	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
PFDA	335-76-2	3.40	4.00	85.0	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
8:2 FTS	39108-34-4	4.19	4.00	105	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
PFNS	68259-12-1	4.09	4.00	102	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
MeFOSAA	2355-31-9	3.48	4.00	86.9	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
EtFOSAA	2991-50-6	3.23	4.00	80.7	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
PFUnA	2058-94-8	3.69	4.00	92.3	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
PFDS	335-77-3	3.17	4.00	79.3	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
11Cl-PF3OUdS	763051-92-9	3.69	4.00	92.3	50 - 150	Q	B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
PFDoA	307-55-1	3.44	4.00	85.9	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
MeFOSA	31506-32-8	4.17	4.00	104	50 - 150	Q	B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
PFTrDA	72629-94-8	3.17	4.00	79.2	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
PFDoS	79780-39-5	4.43	4.00	111	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
PFTeDA	376-06-7	3.90	4.00	97.6	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
EtFOSA	4151-50-2	4.96	4.00	124	50 - 150	Q	B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1

Sample ID: OPR **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA

Matrix: Aqueous

Laboratory Data

Lab Sample: B22E192-BS1 Column: BEH C18

Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
MeFOSE	24448-09-7	3.31	4.00	82.7	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
EtFOSE	1691-99-2	4.50	4.00	113	50 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
Labeled Standards		**Type**		**% Rec**	**Limits**	**Qualifiers**	**Batch**	**Extracted**	**Samp Size**	**Analyzed**	**Dilution**
13C3-PFBA		IS		53.4	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
13C3-PFPeA		IS		70.1	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
13C3-PFBS		IS		87.4	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
13C2-4:2 FTS		IS		75.2	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
13C2-PFHxA		IS		85.1	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
13C3-HFPO-DA		IS		94.4	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
13C4-PFHpA		IS		84.5	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
13C3-PFHxS		IS		82.7	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
13C2-6:2 FTS		IS		76.4	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
13C2-PFOA		IS		88.0	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
13C5-PFNA		IS		82.9	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
13C8-PFOSA		IS		59.1	10 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
13C8-PFOS		IS		85.7	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
13C2-PFDA		IS		83.5	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
13C2-8:2 FTS		IS		77.8	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
d3-MeFOSAA		IS		79.6	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
d5-EtFOSAA		IS		74.5	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
13C2-PFUnA		IS		82.1	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
13C2-PFDoA		IS		77.2	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
d3-MeFOSA		IS		26.0	10 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
13C2-PFTeDA		IS		43.2	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
d5-EtFOSA		IS		26.8	10 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
d7-MeFOSE		IS		38.3	10 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1
d9-EtFOSE		IS		40.8	10 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 22:49	1

Sample ID: Decon water (PFAS Free) **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA
Location: Filtered by Horizon
Matrix: Aqueous
Date Collected: 10-May-22 10:20

Laboratory Data

Lab Sample: 2205141-11
Date Received: 17-May-22 09:04
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	<0.997	0.997	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
PFPeA	2706-90-3	<0.745	0.745	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
PFBS	375-73-5	<0.894	0.894	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
4:2 FTS	757124-72-4	<0.938	0.938	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
PFHxA	307-24-4	<0.805	0.805	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
PFPeS	2706-91-4	<0.810	0.810	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
HFPO-DA	13252-13-6	<1.55	1.55	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
PFHpA	375-85-9	<0.923	0.923	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
ADONA	919005-14-4	<0.632	0.632	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
PFHxS	355-46-4	<1.02	1.02	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
6:2 FTS	27619-97-2	<1.11	1.11	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
PFOA	335-67-1	<0.943	0.943	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
PFHpS	375-92-8	<0.587	0.587	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
PFNA	375-95-1	<0.745	0.745	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
PFOSA	754-91-6	1.37	1.08	1.97	J, Q	B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
PFOS	1763-23-1	<1.12	1.12	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
9Cl-PF3ONS	756426-58-1	<1.05	1.05	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
PFDA	335-76-2	<0.933	0.933	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
8:2 FTS	39108-34-4	<1.12	1.12	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
PFNS	68259-12-1	<1.14	1.14	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
MeFOSAA	2355-31-9	<0.938	0.938	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
EtFOSAA	2991-50-6	<1.03	1.03	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
PFUnA	2058-94-8	<0.745	0.745	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
PFDS	335-77-3	<0.750	0.750	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
11Cl-PF3OUdS	763051-92-9	<0.977	0.977	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
PFDoA	307-55-1	<0.963	0.963	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
MeFOSA	31506-32-8	<2.21	2.21	2.47		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
PFTrDA	72629-94-8	<0.647	0.647	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
PFDoS	79780-39-5	<1.40	1.40	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
PFTeDA	376-06-7	<0.805	0.805	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
EtFOSA	4151-50-2	<2.30	2.30	2.47		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
MeFOSE	24448-09-7	<1.97	1.97	2.47		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
EtFOSE	1691-99-2	<1.55	1.55	1.97		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	52.6	25 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
13C3-PFPeA	IS	80.9	25 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
13C3-PFBS	IS	94.4	25 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1

Sample ID: Decon water (PFAS Free) **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA
Location: Filtered by Horizon
Matrix: Aqueous
Date Collected: 10-May-22 10:20

Laboratory Data

Lab Sample: 2205141-11
Date Received: 17-May-22 09:04
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	85.9	25 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
13C2-PFHxA	IS	89.4	25 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
13C3-HFPO-DA	IS	87.0	25 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
13C4-PFHpA	IS	83.5	25 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
13C3-PFHxS	IS	82.6	25 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
13C2-6:2 FTS	IS	81.4	25 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
13C2-PFOA	IS	81.9	25 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
13C5-PFNA	IS	76.9	25 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
13C8-PFOSA	IS	77.8	10 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
13C8-PFOS	IS	79.9	25 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
13C2-PFDA	IS	83.6	25 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
13C2-8:2 FTS	IS	77.5	25 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
d3-MeFOSAA	IS	84.4	25 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
d5-EtFOSAA	IS	84.4	25 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
13C2-PFUnA	IS	81.6	25 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
13C2-PFDoA	IS	79.1	25 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
d3-MeFOSA	IS	33.9	10 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
13C2-PFTeDA	IS	73.0	25 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
d5-EtFOSA	IS	29.5	10 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
d7-MeFOSE	IS	36.1	10 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1
d9-EtFOSE	IS	39.3	10 - 150		B22E192	27-May-22	0.253 L	01-Jun-22 23:10	1

MDL - Method Detection Limit RL - Reporting limit Results reported to MDL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: Decon water (Tap) — **PFAS Isotope Dilution Method**

Client Data
Name: AECOM
Project: CVRA
Matrix: Aqueous
Date Collected: 11-May-22 10:15

Laboratory Data
Lab Sample: 2205141-12
Date Received: 17-May-22 09:04
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	<1.01	1.01	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
PFPeA	2706-90-3	<0.756	0.756	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
PFBS	375-73-5	<0.906	0.906	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
4:2 FTS	757124-72-4	<0.951	0.951	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
PFHxA	307-24-4	<0.816	0.816	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
PFPeS	2706-91-4	<0.821	0.821	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
HFPO-DA	13252-13-6	<1.57	1.57	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
PFHpA	375-85-9	<0.936	0.936	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
ADONA	919005-14-4	<0.641	0.641	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
PFHxS	355-46-4	<1.03	1.03	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
6:2 FTS	27619-97-2	<1.13	1.13	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
PFOA	335-67-1	<0.956	0.956	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
PFHpS	375-92-8	<0.596	0.596	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
PFNA	375-95-1	<0.756	0.756	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
PFOSA	754-91-6	16.1	1.09	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
PFOS	1763-23-1	<1.13	1.13	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
9Cl-PF3ONS	756426-58-1	<1.07	1.07	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
PFDA	335-76-2	<0.946	0.946	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
8:2 FTS	39108-34-4	<1.14	1.14	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
PFNS	68259-12-1	<1.16	1.16	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
MeFOSAA	2355-31-9	<0.951	0.951	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
EtFOSAA	2991-50-6	<1.04	1.04	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
PFUnA	2058-94-8	<0.756	0.756	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
PFDS	335-77-3	<0.761	0.761	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
11Cl-PF3OUdS	763051-92-9	<0.991	0.991	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
PFDoA	307-55-1	<0.976	0.976	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
MeFOSA	31506-32-8	<2.24	2.24	2.50		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
PFTrDA	72629-94-8	<0.656	0.656	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
PFDoS	79780-39-5	<1.42	1.42	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
PFTeDA	376-06-7	<0.816	0.816	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
EtFOSA	4151-50-2	<2.33	2.33	2.50		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
MeFOSE	24448-09-7	<2.00	2.00	2.50		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
EtFOSE	1691-99-2	<1.57	1.57	2.00		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	40.6	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
13C3-PFPeA	IS	64.6	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
13C3-PFBS	IS	95.2	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1

Sample ID: Decon water (Tap) **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA
Matrix: Aqueous
Date Collected: 11-May-22 10:15

Laboratory Data

Lab Sample: 2205141-12
Date Received: 17-May-22 09:04
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	81.5	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
13C2-PFHxA	IS	80.8	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
13C3-HFPO-DA	IS	79.9	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
13C4-PFHpA	IS	83.2	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
13C3-PFHxS	IS	82.2	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
13C2-6:2 FTS	IS	96.9	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
13C2-PFOA	IS	75.9	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
13C5-PFNA	IS	76.1	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
13C8-PFOSA	IS	66.0	10 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
13C8-PFOS	IS	82.2	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
13C2-PFDA	IS	85.3	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
13C2-8:2 FTS	IS	80.5	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
d3-MeFOSAA	IS	83.5	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
d5-EtFOSAA	IS	81.2	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
13C2-PFUnA	IS	77.0	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
13C2-PFDoA	IS	80.8	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
d3-MeFOSA	IS	17.4	10 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
13C2-PFTeDA	IS	67.9	25 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
d5-EtFOSA	IS	15.6	10 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
d7-MeFOSE	IS	39.1	10 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1
d9-EtFOSE	IS	46.6	10 - 150		B22E192	27-May-22	0.250 L	01-Jun-22 23:52	1

MDL - Method Detection Limit RL - Reporting limit Results reported to MDL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: EB-051122 **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA
Matrix: Aqueous
Date Collected: 11-May-22 16:15

Laboratory Data

Lab Sample: 2205141-13
Date Received: 17-May-22 09:04
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	<0.977	0.977	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
PFPeA	2706-90-3	<0.731	0.731	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
PFBS	375-73-5	<0.876	0.876	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
4:2 FTS	757124-72-4	<0.919	0.919	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
PFHxA	307-24-4	<0.789	0.789	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
PFPeS	2706-91-4	<0.793	0.793	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
HFPO-DA	13252-13-6	<1.51	1.51	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
PFHpA	375-85-9	<0.905	0.905	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
ADONA	919005-14-4	<0.619	0.619	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
PFHxS	355-46-4	<0.997	0.997	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
6:2 FTS	27619-97-2	<1.09	1.09	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
PFOA	335-67-1	<0.924	0.924	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
PFHpS	375-92-8	<0.576	0.576	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
PFNA	375-95-1	<0.731	0.731	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
PFOSA	754-91-6	1.64	1.05	1.94	J	B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
PFOS	1763-23-1	<1.09	1.09	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
9Cl-PF3ONS	756426-58-1	<1.03	1.03	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
PFDA	335-76-2	<0.914	0.914	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
8:2 FTS	39108-34-4	<1.10	1.10	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
PFNS	68259-12-1	<1.12	1.12	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
MeFOSAA	2355-31-9	<0.919	0.919	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
EtFOSAA	2991-50-6	<1.01	1.01	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
PFUnA	2058-94-8	<0.731	0.731	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
PFDS	335-77-3	<0.735	0.735	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
11Cl-PF3OUdS	763051-92-9	<0.958	0.958	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
PFDoA	307-55-1	<0.943	0.943	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
MeFOSA	31506-32-8	<2.17	2.17	2.42		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
PFTrDA	72629-94-8	<0.634	0.634	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
PFDoS	79780-39-5	<1.37	1.37	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
PFTeDA	376-06-7	<0.789	0.789	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
EtFOSA	4151-50-2	<2.25	2.25	2.42		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
MeFOSE	24448-09-7	<1.94	1.94	2.42		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
EtFOSE	1691-99-2	<1.52	1.52	1.94		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	54.1	25 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
13C3-PFPeA	IS	78.3	25 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
13C3-PFBS	IS	88.0	25 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1

Sample ID: EB-051122 **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA
Matrix: Aqueous
Date Collected: 11-May-22 16:15

Laboratory Data

Lab Sample: 2205141-13
Date Received: 17-May-22 09:04
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	79.7	25 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
13C2-PFHxA	IS	86.5	25 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
13C3-HFPO-DA	IS	96.7	25 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
13C4-PFHpA	IS	84.6	25 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
13C3-PFHxS	IS	80.8	25 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
13C2-6:2 FTS	IS	87.2	25 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
13C2-PFOA	IS	84.9	25 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
13C5-PFNA	IS	81.1	25 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
13C8-PFOSA	IS	68.3	10 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
13C8-PFOS	IS	83.1	25 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
13C2-PFDA	IS	75.6	25 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
13C2-8:2 FTS	IS	77.9	25 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
d3-MeFOSAA	IS	83.9	25 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
d5-EtFOSAA	IS	85.5	25 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
13C2-PFUnA	IS	77.3	25 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
13C2-PFDoA	IS	81.4	25 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
d3-MeFOSA	IS	28.0	10 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
13C2-PFTeDA	IS	64.8	25 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
d5-EtFOSA	IS	28.0	10 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
d7-MeFOSE	IS	44.6	10 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1
d9-EtFOSE	IS	48.8	10 - 150		B22E192	27-May-22	0.258 L	02-Jun-22 00:03	1

MDL - Method Detection Limit RL - Reporting limit Results reported to MDL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

AECOM note: Sample "Well #4" obtained from driller's poly tank and not the village well. Sample renamed "Decon Water (Well #4)".

Sample ID: Well #4 — **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA
Location: Well #4 hydrant
Matrix: Aqueous
Date Collected: 12-May-22 11:30

Laboratory Data

Lab Sample: 2205141-14
Date Received: 17-May-22 09:04
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	<1.00	1.00	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
PFPeA	2706-90-3	<0.749	0.749	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
PFBS	375-73-5	<0.898	0.898	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
4:2 FTS	757124-72-4	<0.943	0.943	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
PFHxA	307-24-4	<0.809	0.809	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
PFPeS	2706-91-4	<0.814	0.814	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
HFPO-DA	13252-13-6	<1.55	1.55	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
PFHpA	375-85-9	<0.928	0.928	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
ADONA	919005-14-4	<0.635	0.635	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
PFHxS	355-46-4	<1.02	1.02	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
6:2 FTS	27619-97-2	<1.12	1.12	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
PFOA	335-67-1	<0.948	0.948	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
PFHpS	375-92-8	<0.590	0.590	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
PFNA	375-95-1	<0.749	0.749	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
PFOSA	754-91-6	4.87	1.08	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
PFOS	1763-23-1	<1.12	1.12	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
9Cl-PF3ONS	756426-58-1	<1.06	1.06	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
PFDA	335-76-2	<0.938	0.938	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
8:2 FTS	39108-34-4	<1.13	1.13	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
PFNS	68259-12-1	<1.15	1.15	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
MeFOSAA	2355-31-9	<0.943	0.943	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
EtFOSAA	2991-50-6	<1.03	1.03	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
PFUnA	2058-94-8	<0.749	0.749	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
PFDS	335-77-3	<0.754	0.754	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
11Cl-PF3OUdS	763051-92-9	<0.982	0.982	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
PFDoA	307-55-1	<0.968	0.968	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
MeFOSA	31506-32-8	<2.22	2.22	2.48		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
PFTrDA	72629-94-8	<0.650	0.650	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
PFDoS	79780-39-5	<1.40	1.40	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
PFTeDA	376-06-7	<0.809	0.809	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
EtFOSA	4151-50-2	<2.31	2.31	2.48		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
MeFOSE	24448-09-7	<1.98	1.98	2.48		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
EtFOSE	1691-99-2	<1.56	1.56	1.98		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	79.3	25 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
13C3-PFPeA	IS	83.7	25 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
13C3-PFBS	IS	99.7	25 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1

Sample ID: Well #4 **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA
Location: Well #4 hydrant
Matrix: Aqueous
Date Collected: 12-May-22 11:30

Laboratory Data

Lab Sample: 2205141-14
Date Received: 17-May-22 09:04
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	89.6	25 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
13C2-PFHxA	IS	90.6	25 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
13C3-HFPO-DA	IS	74.5	25 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
13C4-PFHpA	IS	88.8	25 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
13C3-PFHxS	IS	95.6	25 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
13C2-6:2 FTS	IS	88.9	25 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
13C2-PFOA	IS	92.0	25 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
13C5-PFNA	IS	83.9	25 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
13C8-PFOSA	IS	76.5	10 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
13C8-PFOS	IS	92.5	25 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
13C2-PFDA	IS	87.5	25 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
13C2-8:2 FTS	IS	81.1	25 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
d3-MeFOSAA	IS	87.0	25 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
d5-EtFOSAA	IS	89.6	25 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
13C2-PFUnA	IS	86.3	25 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
13C2-PFDoA	IS	87.4	25 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
d3-MeFOSA	IS	10.1	10 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
13C2-PFTeDA	IS	81.0	25 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
d5-EtFOSA	IS	8.60	10 - 150	H	B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
d7-MeFOSE	IS	48.3	10 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1
d9-EtFOSE	IS	51.6	10 - 150		B22E192	27-May-22	0.252 L	02-Jun-22 21:33	1

MDL - Method Detection Limit RL - Reporting limit Results reported to MDL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: FB-051322 **PFAS Isotope Dilution Method**

Client Data
Name: AECOM
Project: CVRA
Matrix: Aqueous
Date Collected: 13-May-22 14:00

Laboratory Data
Lab Sample: 2205141-15
Date Received: 17-May-22 09:04
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	<0.964	0.964	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
PFPeA	2706-90-3	<0.720	0.720	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
PFBS	375-73-5	<0.863	0.863	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
4:2 FTS	757124-72-4	<0.906	0.906	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
PFHxA	307-24-4	<0.778	0.778	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
PFPeS	2706-91-4	<0.782	0.782	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
HFPO-DA	13252-13-6	<1.49	1.49	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
PFHpA	375-85-9	<0.892	0.892	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
ADONA	919005-14-4	<0.611	0.611	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
PFHxS	355-46-4	<0.983	0.983	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
6:2 FTS	27619-97-2	<1.07	1.07	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
PFOA	335-67-1	<0.911	0.911	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
PFHpS	375-92-8	<0.568	0.568	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
PFNA	375-95-1	<0.720	0.720	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
PFOSA	754-91-6	<1.04	1.04	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
PFOS	1763-23-1	<1.08	1.08	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
9Cl-PF3ONS	756426-58-1	<1.02	1.02	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
PFDA	335-76-2	<0.902	0.902	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
8:2 FTS	39108-34-4	<1.08	1.08	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
PFNS	68259-12-1	<1.10	1.10	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
MeFOSAA	2355-31-9	<0.906	0.906	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
EtFOSAA	2991-50-6	<0.992	0.992	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
PFUnA	2058-94-8	<0.720	0.720	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
PFDS	335-77-3	<0.725	0.725	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
11Cl-PF3OUdS	763051-92-9	<0.944	0.944	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
PFDoA	307-55-1	<0.930	0.930	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
MeFOSA	31506-32-8	<2.14	2.14	2.39		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
PFTrDA	72629-94-8	<0.625	0.625	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
PFDoS	79780-39-5	<1.35	1.35	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
PFTeDA	376-06-7	<0.778	0.778	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
EtFOSA	4151-50-2	<2.22	2.22	2.39		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
MeFOSE	24448-09-7	<1.91	1.91	2.39		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
EtFOSE	1691-99-2	<1.50	1.50	1.91		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	88.5	25 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
13C3-PFPeA	IS	77.4	25 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
13C3-PFBS	IS	96.5	25 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1

Sample ID: FB-051322 **PFAS Isotope Dilution Method**

Client Data
Name: AECOM
Project: CVRA
Matrix: Aqueous
Date Collected: 13-May-22 14:00

Laboratory Data
Lab Sample: 2205141-15
Date Received: 17-May-22 09:04
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	83.3	25 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
13C2-PFHxA	IS	93.4	25 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
13C3-HFPO-DA	IS	101	25 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
13C4-PFHpA	IS	86.2	25 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
13C3-PFHxS	IS	86.7	25 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
13C2-6:2 FTS	IS	75.9	25 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
13C2-PFOA	IS	86.2	25 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
13C5-PFNA	IS	78.0	25 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
13C8-PFOSA	IS	66.5	10 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
13C8-PFOS	IS	80.4	25 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
13C2-PFDA	IS	87.4	25 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
13C2-8:2 FTS	IS	76.1	25 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
d3-MeFOSAA	IS	81.7	25 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
d5-EtFOSAA	IS	83.1	25 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
13C2-PFUnA	IS	82.3	25 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
13C2-PFDoA	IS	79.6	25 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
d3-MeFOSA	IS	26.9	10 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
13C2-PFTeDA	IS	68.7	25 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
d5-EtFOSA	IS	28.8	10 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
d7-MeFOSE	IS	43.5	10 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1
d9-EtFOSE	IS	45.5	10 - 150		B22E192	27-May-22	0.262 L	02-Jun-22 00:24	1

MDL - Method Detection Limit RL - Reporting limit Results reported to MDL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
CRS	Cleanup Recovery Standard
D	Dilution
DL	Detection Limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
IS	Internal Standard
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limit of Detection
LOQ	Limit of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
MDL	Method Detection Limit
NA	Not applicable
ND	Not Detected
OPR	Ongoing Precision and Recovery sample
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
RL	Reporting Limit
RL	For 537.1, the reported RLs are the MRLs.
TEQ	Toxic Equivalency, sum of the toxic equivalency factors (TEF) multiplied by the sample concentrations.
TEQMax	TEQ calculation that uses the detection limit as the concentration for non-detects
TEQMin	TEQ calculation that uses zero as the concentration for non-detects
TEQRisk	TEQ calculation that uses ½ the detection limit as the concentration for non-detects
U	Not Detected (specific projects only)
*	See Cover Letter

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	21-023-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2020018
Massachusetts Department of Environmental Protection	M-CA413
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	2211390
New Hampshire Environmental Accreditation Program	207721
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Ohio Environmental Protection Agency	87778
Oregon Laboratory Accreditation Program	4042-021
Pennsylvania Department of Environmental Protection	018
Texas Commission on Environmental Quality	T104704189-22-13
Vermont Department of Health	VT-4042
Virginia Department of General Services	11276
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	**Method**
Determination of Polychlorinated p- Dioxins & Polychlorinated Dibenzofurans	EPA 23
Polychlorinated Dibenzodioxins in Ambient Air by GC/HRMS	EPA TO-9A

MATRIX: Biological Tissue	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	PFAS Isotope Dilution
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613/1613B
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	PFAS Isotope Dilution
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537.1
Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry	EPA 533
Perfluorooctanesulonate (PFOS) and Perfluorooctanoate (PFOA) - Method for Unfiltered Samples Using Solid Phase Extraction and Liquid Chromatography/Mass Spectrometry	ISO 25101 2009

MATRIX: Non-Potable Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	PFAS Isotope Dilution
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	**Method**
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	PFAS Isotope Dilution
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 2205141 Temp: 1.8 °C
Storage ID: R-3, UR-2 Storage Secured: Yes ☑ No ☐

Project ID: CVRA PO#: 6000069804 Sampler: Marius Hopkins (name)

TAT (check one): Standard: ☒ 21 days; Rush (surcharge may apply): ☐ 14 days ☐ 7 days Specify: _____

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Marius Hopkins	5/16/22	1600	Marissa Sparks	05/17/22	0904

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: _____

Method of Shipment: _____

Tracking No.: _____

Add Analysis(es) Requested

Sample ID	Date	Time	Location/ Sample Description	Container(s) Quantity	Type	Matrix	PFOA/PFOS	UCMR3 PFAS List 6	537.1 List: 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: WI 33 List (Please attach analyte list)	PFOA/PFOS	UCMR3 PFAS List 6	537.1 List of 14	537.1 List of 18	Comments
AMW-01 (80-80.5)	5/9/22	1500		1	P	SO					X					
AMW-04 (1-2)	5/11/22	1310		1	P	SO					X					
AMW-04 (69-70)	5/11/22	1450		1	P	SO					X					low Quantity
AMW-05 (1-2)	5/12/22	0945		1	P	SO					X					
ASB-01 (1-2)	5/12/22	1015		1	P	SO					X					
AMW-05 (65-67)	5/12/22	1120		1	P	SO					X					
AMW-03 (1-2)	5/13/22	0745		1	P	SO					X					
AMW-03 (35-37)	5/13/22	0905		1	P	SO					X					
AMW-03 (68-70)	5/13/22	1230		1	P	SO					X					
AMW-03 (68-70) Dup	5/13/22	1230		1	P	SO					X					

Special Instructions/Comment

SEND DOCUMENTATION AND RESULTS TO:

Name: Andrew Mott
Company: _____
Address: _____
City: _____ State: ___ Zip: _____
Phone: _____
Email: _____

Container Types: P = HDPE, PJ = HDPE Jar, PY = Polypropylene, O= Other _____

Bottle Preservation Type: TZ= Trizma: _____

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other _____

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 2205141 Temp: 1.8 °C
Storage ID: R-3, WR-2 Storage Secured: Yes ☐ No ☐

Project ID: CURA PO#: 6006697D4 Sampler: Marcus Hopkins (name)

TAT (check one): Standard: [X] 21 days; Rush (surcharge may apply): [ ] 14 days [ ] 7 days Specify

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Marcus Hopkins	5/11/22	1600	Marissa Sparks	05/17/22	0904

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: _____ Method of Shipment: _____ Tracking No.: _____

Add Analysis(es) Requested

Sample ID	Date	Time	Location/ Sample Description	Container(s) Quantity	Type	Matrix	PFAS by Isotope Dilution: PFOA/PFOS	UCMR3 PFOA/PFOS	537.1 LL: 24 or 18 (Circle One)	537.1 LL: 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: 01-33 List (Please attach analyte list)	EPA Method 537 (DW only): PFOA/PFOS	UCMR3 PFAS List 6	537.1 List of 14	537.1 List of 18	Comments
Decon water (PFAS Free)	5/19/22	1020	"Filtered" by Horizon	2	P	AQ						X					
Decon water (TAP)	5/11/22	1015		2	P	AQ						X					
EB-051122	5/11/22	1615		2	P	AQ						X					Split spoon sampler
Well #4	5/12/22	1130	Well #4 hydrant	2	P	AQ						X					
FB-051322	5/13/22	1400		2	P	AQ						X					

AECOM note: Sample "Well #4" obtained from driller's poly tank and not the village well. Sample renamed "Decon Water (Well #4)".

Special Instructions/Comment

SEND DOCUMENTATION AND RESULTS TO:
Name: Andrew Mott
Company:
Address:
City: State: Zip:
Phone:
Email:

Container Types: P = HDPE, PJ = HDPE Jar, PY = Polypropylene, O= Other _____
Bottle Preservation Type: TZ= Trizma: _____
Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other _____

ID: LR-537COC Rev. No.: 2 Rev. Date: 08/03/2020 Page: 1 of 1

Vista Analytical Laboratory

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 2205141 TAT Std

Samples Arrival:	**Date/Time** 05/17/22 0904		**Initials:** MWS		**Location:** WR-2 **Shelf/Rack:** N/A		
Delivered By:	FedEx	UPS	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	Ice		Blue Ice		Techni Ice	Dry Ice	None
Temp °C: 1.9 (uncorrected)			**Probe used: Y / N**		**Thermometer ID:** IR-3		
Temp °C: 1.8 (corrected)							

	YES	NO	NA
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?			✓
Airbill — Trk # 2731 8804 6059	✓		
Shipping Documentation Present?	✓		
Shipping Container: Vista / Client / Retain / Return / Dispose			
Chain of Custody / Sample Documentation Present?	✓		
Chain of Custody / Sample Documentation Complete?	✓		
Holding Time Acceptable?	✓		

Logged In:	**Date/Time** 05/17/22 16:00	**Initials:** KM	**Location:** WR-2, R-13 **Shelf/Rack:** A-2, F-6, A-2
COC Anomaly/Sample Acceptance Form completed?	✓	.	

Comments:

CoC/Label Reconciliation Report WO# 2205141

LabNumber	CoC Sample ID		SampleAlias	Sample Date/Time		Container	BaseMatrix	Sample Comments
2205141-01	A AMW-01 (80-80.5)	☑		09-May-22 15:00	☑	HDPE Jar, 6 oz	Solid	
2205141-02	A AMW-04 (1-2)	☑		11-May-22 13:10	☑	HDPE Jar, 6 oz	Solid	
2205141-03	A AMW-04 (69-70)	☑		11-May-22 14:50	☑	HDPE Jar, 6 oz	Solid	
2205141-04	A AMW-05 (1-2)	☑		12-May-22 09:45	☑	HDPE Jar, 6 oz	Solid	
2205141-05	A ASB-01 (1-2)	☑		12-May-22 10:15	☑	HDPE Jar, 6 oz	Solid	
2205141-06	A AMW-05 (65-67)	☑		12-May-22 11:20	☑	HDPE Jar, 6 oz	Solid	
2205141-07	A AMW-03 (1-2)	☑		13 May 22 07:15	☑	HDPE Jar, 6 oz	Solid	
2205141-08	A AMW-03 (35-37)	☑		11-May-22 09:05	☐ (A)	HDPE Jar, 6 oz	Solid	
2205141-09	A AMW-03 (68-70)	☑		13-May-22 12:30	☑	HDPE Jar, 6 oz	Solid	
2205141-10	A AMW-03 (68-70) Dup	☑		13-May-22 12:30	☑	HDPE Jar, 6 oz	Solid	
2205141-11	A Decon water (PFAS Free)	☑	Filtered by Horizon	10-May-22 10:20	☑	HDPE Bottle, 250 mL	Aqueous	
2205141-11	B Decon water (PFAS Free)	☑	Filtered by Horizon	10-May-22 10:20	☑	HDPE Bottle, 250 mL	Aqueous	
2205141-12	A Decon water (Tap)	☑		11-May-22 10:15	☑	HDPE Bottle, 250 mL	Aqueous	
2205141-12	B Decon water (Tap)	☑		11 May 22 10:15	☑	HDPE Bottle, 250 mL	Aqueous	
2205141-13	A EB-051122	☑		11-May-22 16:15	☑	HDPE Bottle, 250 mL	Aqueous	
2205141-13	B EB-051122	☑		11-May-22 16:15	☑	HDPE Bottle, 250 mL	Aqueous	
2205141-14	A Well #4	☑	Well #4 hydrant	12-May-22 11:30	☑	HDPE Bottle, 250 mL	Aqueous	
2205141-14	B Well #4	☑	Well #4 hydrant	12-May-22 11:30	☑	HDPE Bottle, 250 mL	Aqueous	
2205141-15	A FB-051322	☑		13-May-22 14:00	☑	HDPE Bottle, 250 mL	Aqueous	
2205141-15	B FB-051322	☑		13-May-22 14:00	☑	HDPE Bottle, 250 mL	Aqueous	

Checkmarks indicate that information on the COC reconciled with the sample label.
Any discrepancies are noted in the following columns.

	Yes	No	NA
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Adequate Sample Volume?	✓		
Container Type Appropriate for Analysis(es)	✓		

Comments: @ Sample Label ~~time~~ 1900 5/12/22 date : 05/12/22

Preservation Documented: $Na_2S_2O_3$ Trizma $NH_4CH_3CO_2$ (None) Other

Verified by/Date: VA 05/16/22

Vista Analytical Laboratory

ANOMALY FORM

Vista Work Order 2205141

Initial/Date		The following checked issues were noted during sample receipt and login:
_____	☐	**1. The samples were received out of temperature at (WI-PHT): _____** Was Ice present: Yes No Melted Blue Ice
_____	☐	2. The Chain-of-Custody (CoC) was not relinquished properly.
_____	☐	3. The CoC did not include collection time(s). 00:00 will be used unless notified otherwise.
_____	☐	4. The sample(s) did not include a sample collection time. All or Sample Name: _____
_____	☐	5. A sample ID discrepancy was found. See the Reconciliation report. The CoC Sample ID will be used unless notified otherwise.
VA 05/18/22	☑	6. A sample date and/or time discrepancy was found. See the Reconciliation report. The CoC Sample date/time will be used unless notified otherwise.
_____	☐	**7. The CoC did not include a sample matrix. The following sample matrix will be used: _____**
_____	☐	**8. Insufficent volume received for analysis. All or Sample Name: _____**
_____	☐	9. The backup bottle was received broken. Sample Name: _____
_____	☐	**10. CoC not received, illegible or destroyed.**
_____	☐	**11. The sample(s) were received out of holding time. All or Sample Name: _____**
_____	☐	**12. The CoC did not include an analysis. All or Sample Name: _____**
_____	☐	**13. Sample(s) received without collection date. All or Sample Name: _____**
_____	☐	**14. Sample(s) not received. All or Sample Name: _____**
_____	☐	**15. Sample(s) received broken. All or Sample Name: _____**
_____	☐	**16. An incorrect container-type was used. All or Sample Name: _____**
_____	☐	17. The Field Reagent Blank (FRB) preservative was from a different lot than the field samples. Will proceed with analysis and narrate unless notified otherwise.
_____	☐	18. Other:

Bolded items require sign-off

Client Contacted: _____

Date of Contact: _____

Vista Client Manager: _____

Resolution:

AECOM
1555 N. RiverCenter Drive, Suite 214
Milwaukee, WI 53212
414.944.6080 tel
414.944.6081 fax

Data Validation Report

Project:	CVRA
Laboratory:	Vista Analytical Laboratory, 1104 Windfield Way, El Dorado Hills, CA 95762
Work Order (WO):	2206072
Analyses/Method:	Per- and Polyfluorinated Alkyl Substances (PFASs) / PFAS Isotope Dilution Method / Method 537 Modified
Validation Level:	Level 2
Prepared by:	Susanne Seydel / Lisa Smith (CEAC) Completed on: 7/20/2022

The samples listed below were collected by AECOM on June 7 and 8, 2022.

Sample ID	Quality Control	Sample Date/Time	Laboratory ID
Groundwater Samples:			
MW-55A		6/7/2022	2206072-01
MW-51A		6/7/2022	2206072-02
MW-51A Dup	Field duplicate of MW-51A	6/7/2022	2206072-03
AMW-01		6/7/2022	2206072-04
AMW-02		6/7/2022	2206072-05
AMW-05		6/7/2022	2206072-07
AMW-04		6/8/2022	2206072-08
AMW-03		6/8/2022	2206072-09
Field Quality Control Samples:			
EB-060722	Equipment Blank	6/7/2022	2206072-06
AB-060822	Ambient Blank	6/8/2022	2206072-10

Data validation activities were conducted with reference to:

- *Wisconsin DNR PFAS Updates,* March 1, 2021
- *Wisconsin PFAS Aqueous (Non-Potable Water) and Non-Aqueous Matrices Method Expectations*, EA-19-0001-C, 12/19/2019.
- *Data Validation Guidelines Module 3: Data Validation Procedure for Per- and Polyfluoroalkyl Substances Analysis by QSM Table B-15,* Department of Defense, 5/1/2020.

In the absence of method-specific information, laboratory quality control (QC) limits, or project-specific requirements, AECOMs professional judgment was used as appropriate.

REVIEW ELEMENTS

The data were evaluated based on the following parameters (where applicable to the method):

✓ Data completeness (chain-of-custody (CoC)/sample integrity
✓ Holding times
✓ Laboratory blanks

✓ Field and Equipment blanks
✗ Extracted Internal Standards (EIS) (Lab H flag)
✓ Laboratory control sample (LCS)
✗ Ion ratios (IR) (Lab Q flag)
✓ Field duplicates

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. The symbol (✗) indicates that a QC nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

SUMMARY

Based on the results of the validation, the data are valid as reported and may be used for decision making purposes, except for multiple results that were rejected (R flag) due to very low EIS recoveries. In addition, results were also qualified as estimated (J flag) due to EISs and transition ion ratios. A detailed data validation discussion is provided below.

DETAILED REVIEW

Data Completeness

The data packages were reviewed and met the following acceptance criteria for completeness:

- The CoCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the CoC requests.

The following items are noted for informational purposes (and do not affect data usability):

- Field staff noted on the CoC record, that there was “insufficient sample volume” collected for sample AMW-02. The method detection limits were slightly elevated by the lower sample volume.

Holding Times

Samples were extracted within the 28-day holding time and analyzed within 30 days of extraction.

Laboratory Blanks

A laboratory method blank was analyzed to assess contamination from laboratory procedures. The method blanks were analyzed at the correct frequency. The results are expected to be less than one-half the method reporting limit (MRL). Contaminants were not detected in the method blank.

Field (Ambient) and Equipment Blanks

Field blanks are analyzed to assess contamination from field procedures. Field equipment and ambient blanks were analyzed at the correct frequency. Contaminants were not detected in the field blanks.

Extracted Internal Standards

Extracted internal standards (EISs) are spiked into all field samples, field QC samples, and method QC samples and are used to quantitate the analytes. The EIS recoveries were within the WI limits of 10-150% for the FOSA, NMeFOSA, NEtFOSA, NMeFOSE, and NEtFOSE EISs, and were within the limits of 25-150% for other EISs, except for those listed below.

Lab ID	Sample ID	EIS Parameter	% R	Affected Parameter	Original Result	Final Result & Flag
2206072-04	AMW-01	d3-MeFOSA	7.00	MeFOSA	2.18U ng/l	R
2206072-04	AMW-01	d5-EtFOSA	5.00	EtFOSA	2.27U ng/l	R
2206072-05	AMW-02	13C3-PFBA	19.3	PFBA	2.85 U ng/l	R
2206072-05	AMW-02	d3-MeFOSA	1.20	MeFOSA	3.19U ng/l	R
2206072-05	AMW-02	13C2-PFTeDA	10.1	PFTeDA PFTrDA	1.16U ng/l 0.934U ng/l	R R
2206072-05	AMW-02	d7-MeFOSE	9.10	MeFOSE	2.85U ng/l	R
2206072-05	AMW-02	d9-EtFOSE	5.60	EtFOSE	2.24U ng/l	R
2206072-09	AMW-03	13C2-6:2 FTS	204	6:2 FTS	12800 ng/l	J

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LCS Results (OPR)

The OPR (Ongoing Precision and Recovery sample) or LCS, was analyzed to monitor the accuracy of the analytical method independent of matrix effects. Recoveries (%Rs) were within the WI limits 60% to 135% limit for normal range LCSs and were acceptable.

Ion Transition Ratios

Laboratory qualifiers indicate that several samples did not meet the ion transition ratio criteria which were qualified as “Q” by the laboratory and summarized below. These results were qualified as estimated (J) and are considered as estimated maximum concentrations.

Lab ID	Sample ID	Parameter	Concentration and Validator Flag	Units	MDL	RL
2206072-01	MW-55A	PFOSA	3.95 J	ng/L	1.10	2.03
2206072-01	MW-55A	PFOS	11.9 J	ng/L	1.14	2.03
2206072-02	MW-51A	PFOSA	2.19 J	ng/L	1.08	1.98
2206072-05	AMW-02	PFOS	4.79 J	ng/L	1.61	2.85

Field Duplicate Results

Field duplicates are collected to assess the overall precision of field sampling and laboratory analysis. Samples MW-51A and MW-51A Dup were parent and field duplicate, respectively. Field duplicate relative percent differences (RPDs) were less than the groundwater criteria of 30%, or the absolute difference of the results were with ± the reporting limit (RL) if one or both results were less than five times the RL. A summary of the field duplicate results (detections only) and RPDs are as follows:

Sample & Compound(s)	Units	RL (max)	Sample Concentration	Field Duplicate Concentration	RPD (%)
PFBA	ng/L	1.98	55.7	57.1	2.5
PFPeA	ng/L	1.98	14.0	14.2	1.4
PFBS	ng/L	1.98	21.9	21.6	1.4
PFHxA	ng/L	1.98	14.1	14.3	1.4
PFPeS	ng/L	1.98	2.22	2.00	10.4
PFHpA	ng/L	1.98	4.51	3.78	17.6
PFHxS	ng/L	1.98	6.48	6.64	2.4
PFOA	ng/L	1.98	14.0	13.2	5.9
PFOSA	ng/L	1.98	2.19	2.45	11.2
PFOS	ng/L	1.98	2.14	2.41	11.9

No qualification was required for field duplicate precision.

Sample Results and Quantitation

Sample results were reviewed for correct methods, units, and reported analytes. No issues or discrepancies were found during this review, with the exception that the EtFOSA result for sample AMW-02 was not reported. The laboratory indicated that the result was not reported due a low internal standard recovery, and added a comment to the case narrative.

The laboratory case narrative indicated that samples "AMW-01", "AMW-02" and "AMW-03" contained particulate and were centrifuged prior to extraction.

Dilutions were performed for multiple samples due to elevated target compound concentrations. The laboratory flagged the affected sample results with a D flag. samples, parameters, and concentrations were as follows:

Lab ID	Sample ID	Parameter	Dilution Factor	Concentration	Units	MDL	RL
2206072-07	AMW-05	PFHxS	5	3610	ng/L	5.23	10.2
2206072-07	AMW-05	PFOS	5	3160	ng/L	5.74	10.2
2206072-09	AMW-03	PFPeA	40	6040	ng/L	30.1	79.7
2206072-09	AMW-03	PFHxA	40	3270	ng/L	32.5	79.7
2206072-09	AMW-03	PFHxS	40	7080	ng/L	41.1	79.7
2206072-09	AMW-03	6:2 FTS	40	12800	ng/L	44.8	79.7
2206072-09	AMW-03	PFOS	40	5230	ng/L	45.0	79.7

No qualification was required for diluted results.

Qualified Analytical Results

Results reported below the Reporting Limit/LOQ were qualified as estimated (J) by the laboratory; qualifications of these results were accepted by the Validator; however, they are not listed in the table below. In addition, R qualifiers take precedence over J qualifiers.

Table 1 - Data Validation Summary of Qualified Data

Lab ID	Sample ID	Analyte	Validation Qualifier (1)	Units	Reason Code (2)
2206072-01	MW-55A	PFOSA	3.95 J	ng/l	ir
2206072-01	MW-55A	PFOS	11.9 J	ng/l	ir
2206072-02	MW-51A	PFOSA	2.19 J	ng/l	ir
2206072-05	AMW-02	PFOS	4.79 J	ng/l	ir
2206072-04	AMW-01	MeFOSA	2.18 R	ng/l	eis
2206072-04	AMW-01	EtFOSA	2.27 R	ng/l	eis
2206072-05	AMW-02	PFBA	2.85 R	ng/l	eis
2206072-05	AMW-02	MeFOSA	3.19 R	ng/l	eis
2206072-05	AMW-02	PFTeDA	1.16 R	ng/l	eis
2206072-05	AMW-02	PFTrDA	0.934 R	ng/l	eis
2206072-05	AMW-02	MeFOSE	2.85 R	ng/l	eis
2206072-05	AMW-02	EtFOSE	2.24 R	ng/l	eis
2206072-09	AMW-03	6:2 FTS	12800 J	ng/l	eis

(1): Data Validation Qualifiers:

J	Estimated, +/- indicate the direction of bias
R	Not usable for risk evaluations

(2): Reason Codes:

eis	Extracted internal standard
ir	Ion ratios

July 20, 2022

Vista Work Order No. 2206072

Mr. Andrew Mott
AECOM
558 North Main Street
Oshkosh, WI 54901

Dear Mr. Mott,

Enclosed are the amended results for the sample set received at Vista Analytical Laboratory on June 09, 2022 under your Project Name 'CVRA'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at jfox@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Jamie Fox
Laboratory Director

Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Work Order No. 2206072
Case Narrative

Sample Condition on Receipt:

Ten aqueous samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. The samples were received in good condition and within the recommended temperature requirements.

Analytical Notes:

PFAS Isotope Dilution Method

Samples "AMW-01", "AMW-02" and "AMW-03" contained particulate and were centrifuged prior to extraction.

The samples were extracted and analyzed for a selected list of PFAS using Vista's PFAS Isotope Dilution Method. The results for PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

The sample result for EtFOSA could not be reported in sample "AMW-02" due to low internal standard recovery. There was no additional volume to perform a re-extraction.

Holding Times

The samples were extracted and analyzed within the hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above the Reporting Limit. The OPR recoveries were within the method acceptance criteria.

The labeled standard recoveries outside the acceptance criteria are listed in the table below.

QC Anomalies

LabNumber	SampleName	Analysis	Analyte	Flag	%Rec
2206072-04	AMW-01	PFAS Isotope Dilution Method	d3-MeFOSA	H	7.00
2206072-04	AMW-01	PFAS Isotope Dilution Method	d5-EtFOSA	H	5.00
2206072-05	AMW-02	PFAS Isotope Dilution Method	13C3-PFBA	H	19.3
2206072-05	AMW-02	PFAS Isotope Dilution Method	d3-MeFOSA	H	1.20
2206072-05	AMW-02	PFAS Isotope Dilution Method	13C2-PFTeDA	H	10.1
2206072-05	AMW-02	PFAS Isotope Dilution Method	d7-MeFOSE	H	9.10
2206072-05	AMW-02	PFAS Isotope Dilution Method	d9-EtFOSE	H	5.60
2206072-09	AMW-03	PFAS Isotope Dilution Method	13C2-6:2 FTS	H	204

H = Recovery was outside laboratory acceptance criteria.

TABLE OF CONTENTS

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2206072-01	MW-55A	07-Jun-22 09:40	09-Jun-22 09:35	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2206072-02	MW-51A	07-Jun-22 11:10	09-Jun-22 09:35	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2206072-03	MW-51A Dup	07-Jun-22 11:10	09-Jun-22 09:35	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2206072-04	AMW-01	07-Jun-22 13:55	09-Jun-22 09:35	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2206072-05	AMW-02	07-Jun-22 15:30	09-Jun-22 09:35	HDPE Bottle, 250 mL
2206072-06	EB-060722	07-Jun-22 12:40	09-Jun-22 09:35	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2206072-07	AMW-05	07-Jun-22 17:30	09-Jun-22 09:35	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2206072-08	AMW-04	08-Jun-22 09:35	09-Jun-22 09:35	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2206072-09	AMW-03	08-Jun-22 11:10	09-Jun-22 09:35	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2206072-10	AB-060822	08-Jun-22 11:30	09-Jun-22 09:35	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: Method Blank — **PFAS Isotope Dilution Method**

Client Data
Name: AECOM
Project: CVRA
Matrix: Aqueous

Laboratory Data
Lab Sample: B22F069-BLK1
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	<1.01	1.01	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
PFPeA	2706-90-3	<0.755	0.755	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
PFBS	375-73-5	<0.905	0.905	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
4:2 FTS	757124-72-4	<0.950	0.950	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
PFHxA	307-24-4	<0.815	0.815	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
PFPeS	2706-91-4	<0.820	0.820	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
HFPO-DA	13252-13-6	<1.57	1.57	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
PFHpA	375-85-9	<0.935	0.935	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
ADONA	919005-14-4	<0.640	0.640	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
PFHxS	355-46-4	<1.03	1.03	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
6:2 FTS	27619-97-2	<1.13	1.13	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
PFOA	335-67-1	<0.955	0.955	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
PFHpS	375-92-8	<0.595	0.595	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
PFNA	375-95-1	<0.755	0.755	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
PFOSA	754-91-6	<1.09	1.09	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
PFOS	1763-23-1	<1.13	1.13	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
9Cl-PF3ONS	756426-58-1	<1.07	1.07	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
PFDA	335-76-2	<0.945	0.945	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
8:2 FTS	39108-34-4	<1.14	1.14	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
PFNS	68259-12-1	<1.16	1.16	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
MeFOSAA	2355-31-9	<0.950	0.950	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
EtFOSAA	2991-50-6	<1.04	1.04	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
PFUnA	2058-94-8	<0.755	0.755	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
PFDS	335-77-3	<0.760	0.760	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
11Cl-PF3OUdS	763051-92-9	<0.990	0.990	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
PFDoA	307-55-1	<0.975	0.975	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
MeFOSA	31506-32-8	<2.24	2.24	2.50		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
PFTrDA	72629-94-8	<0.655	0.655	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
PFDoS	79780-39-5	<1.42	1.42	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
PFTeDA	376-06-7	<0.815	0.815	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
EtFOSA	4151-50-2	<2.33	2.33	2.50		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
MeFOSE	24448-09-7	<2.00	2.00	2.50		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
EtFOSE	1691-99-2	<1.57	1.57	2.00		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	83.3	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
13C3-PFPeA	IS	81.2	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
13C3-PFBS	IS	80.2	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
13C2-4:2 FTS	IS	91.2	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1

Sample ID: Method Blank **PFAS Isotope Dilution Method**

Client Data
Name: AECOM
Project: CVRA
Matrix: Aqueous

Laboratory Data
Lab Sample: B22F069-BLK1
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	IS	86.7	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
13C3-HFPO-DA	IS	80.3	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
13C4-PFHpA	IS	89.1	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
13C3-PFHxS	IS	88.5	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
13C2-6:2 FTS	IS	80.0	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
13C2-PFOA	IS	86.1	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
13C5-PFNA	IS	83.4	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
13C8-PFOSA	IS	34.6	10 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
13C8-PFOS	IS	81.1	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
13C2-PFDA	IS	76.5	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
13C2-8:2 FTS	IS	89.3	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
d3-MeFOSAA	IS	72.1	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
d5-EtFOSAA	IS	58.9	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
13C2-PFUnA	IS	68.0	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
13C2-PFDoA	IS	58.1	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
d3-MeFOSA	IS	15.1	10 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
13C2-PFTeDA	IS	59.1	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
d5-EtFOSA	IS	11.2	10 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
d7-MeFOSE	IS	25.1	10 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1
d9-EtFOSE	IS	23.4	10 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:15	1

MDL - Method Detection Limit RL - Reporting limit Results reported to MDL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: OPR **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA

Matrix: Aqueous

Laboratory Data

Lab Sample: B22F069-BS1 Column: BEH C18

Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	4.03	4.00	101	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
PFPeA	2706-90-3	3.80	4.00	95.0	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
PFBS	375-73-5	3.78	4.00	94.5	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
4:2 FTS	757124-72-4	3.68	4.00	92.1	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
PFHxA	307-24-4	4.09	4.00	102	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
PFPeS	2706-91-4	3.55	4.00	88.7	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
HFPO-DA	13252-13-6	4.45	4.00	111	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
PFHpA	375-85-9	4.68	4.00	117	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
ADONA	919005-14-4	3.75	4.00	93.8	50 - 150	Q	B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
PFHxS	355-46-4	3.79	4.00	94.9	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
6:2 FTS	27619-97-2	4.13	4.00	103	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
PFOA	335-67-1	3.78	4.00	94.5	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
PFHpS	375-92-8	4.75	4.00	119	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
PFNA	375-95-1	4.28	4.00	107	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
PFOSA	754-91-6	4.10	4.00	103	50 - 150	Q	B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
PFOS	1763-23-1	2.63	4.00	65.8	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
9Cl-PF3ONS	756426-58-1	4.18	4.00	105	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
PFDA	335-76-2	4.15	4.00	104	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
8:2 FTS	39108-34-4	3.98	4.00	99.4	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
PFNS	68259-12-1	3.16	4.00	79.0	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
MeFOSAA	2355-31-9	3.27	4.00	81.8	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
EtFOSAA	2991-50-6	4.25	4.00	106	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
PFUnA	2058-94-8	3.73	4.00	93.3	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
PFDS	335-77-3	2.53	4.00	63.2	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
11Cl-PF3OUdS	763051-92-9	3.89	4.00	97.3	50 - 150	Q	B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
PFDoA	307-55-1	4.06	4.00	102	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
MeFOSA	31506-32-8	4.60	4.00	115	50 - 150	Q	B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
PFTrDA	72629-94-8	4.79	4.00	120	50 - 150	Q	B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
PFDoS	79780-39-5	3.77	4.00	94.2	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
PFTeDA	376-06-7	3.97	4.00	99.2	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
EtFOSA	4151-50-2	3.41	4.00	85.3	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1

Sample ID: OPR **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA

Matrix: Aqueous

Laboratory Data

Lab Sample: B22F069-BS1 Column: BEH C18

Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
MeFOSE	24448-09-7	3.38	4.00	84.5	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
EtFOSE	1691-99-2	2.53	4.00	63.2	50 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
Labeled Standards		**Type**		**% Rec**	**Limits**	**Qualifiers**	**Batch**	**Extracted**	**Samp Size**	**Analyzed**	**Dilution**
13C3-PFBA		IS		84.4	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
13C3-PFPeA		IS		85.6	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
13C3-PFBS		IS		84.8	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
13C2-4:2 FTS		IS		97.0	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
13C2-PFHxA		IS		89.1	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
13C3-HFPO-DA		IS		87.0	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
13C4-PFHpA		IS		90.7	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
13C3-PFHxS		IS		83.2	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
13C2-6:2 FTS		IS		78.7	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
13C2-PFOA		IS		82.2	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
13C5-PFNA		IS		84.7	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
13C8-PFOSA		IS		42.2	10 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
13C8-PFOS		IS		91.7	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
13C2-PFDA		IS		80.8	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
13C2-8:2 FTS		IS		78.2	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
d3-MeFOSAA		IS		71.7	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
d5-EtFOSAA		IS		62.1	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
13C2-PFUnA		IS		71.8	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
13C2-PFDoA		IS		64.2	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
d3-MeFOSA		IS		16.9	10 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
13C2-PFTeDA		IS		67.4	25 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
d5-EtFOSA		IS		15.0	10 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
d7-MeFOSE		IS		31.5	10 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1
d9-EtFOSE		IS		27.4	10 - 150		B22F069	23-Jun-22	0.250 L	27-Jun-22 17:26	1

Sample ID: MW-55A **PFAS Isotope Dilution Method**

Client Data
Name: AECOM
Project: CVRA
Matrix: Aqueous
Date Collected: 07-Jun-22 09:40

Laboratory Data
Lab Sample: 2206072-01
Date Received: 09-Jun-22 09:35
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	5.39	1.02	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
PFPeA	2706-90-3	5.94	0.765	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
PFBS	375-73-5	12.6	0.917	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
4:2 FTS	757124-72-4	<0.963	0.963	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
PFHxA	307-24-4	2.14	0.826	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
PFPeS	2706-91-4	1.89	0.831	2.03	J	B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
HFPO-DA	13252-13-6	<1.59	1.59	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
PFHpA	375-85-9	<0.947	0.947	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
ADONA	919005-14-4	<0.648	0.648	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
PFHxS	355-46-4	10.5	1.04	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
6:2 FTS	27619-97-2	<1.14	1.14	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
PFOA	335-67-1	<0.968	0.968	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
PFHpS	375-92-8	1.64	0.603	2.03	J	B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
PFNA	375-95-1	<0.765	0.765	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
PFOSA	754-91-6	3.95	1.10	2.03	Q	B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
PFOS	1763-23-1	11.9	1.14	2.03	Q	B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
9Cl-PF3ONS	756426-58-1	<1.08	1.08	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
PFDA	335-76-2	<0.957	0.957	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
8:2 FTS	39108-34-4	<1.15	1.15	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
PFNS	68259-12-1	<1.17	1.17	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
MeFOSAA	2355-31-9	<0.963	0.963	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
EtFOSAA	2991-50-6	<1.05	1.05	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
PFUnA	2058-94-8	<0.765	0.765	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
PFDS	335-77-3	<0.770	0.770	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
11Cl-PF3OUdS	763051-92-9	<1.00	1.00	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
PFDoA	307-55-1	<0.988	0.988	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
MeFOSA	31506-32-8	<2.27	2.27	2.53		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
PFTrDA	72629-94-8	<0.664	0.664	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
PFDoS	79780-39-5	<1.43	1.43	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
PFTeDA	376-06-7	<0.826	0.826	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
EtFOSA	4151-50-2	<2.36	2.36	2.53		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
MeFOSE	24448-09-7	<2.03	2.03	2.53		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
EtFOSE	1691-99-2	<1.59	1.59	2.03		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	82.3	25 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
13C3-PFPeA	IS	87.1	25 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
13C3-PFBS	IS	79.7	25 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1

Sample ID: MW-55A **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA
Matrix: Aqueous
Date Collected: 07-Jun-22 09:40

Laboratory Data

Lab Sample: 2206072-01
Date Received: 09-Jun-22 09:35
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	99.5	25 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
13C2-PFHxA	IS	87.2	25 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
13C3-HFPO-DA	IS	85.6	25 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
13C4-PFHpA	IS	85.3	25 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
13C3-PFHxS	IS	86.8	25 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
13C2-6:2 FTS	IS	77.2	25 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
13C2-PFOA	IS	80.0	25 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
13C5-PFNA	IS	85.2	25 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
13C8-PFOSA	IS	59.1	10 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
13C8-PFOS	IS	101	25 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
13C2-PFDA	IS	82.4	25 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
13C2-8:2 FTS	IS	90.6	25 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
d3-MeFOSAA	IS	88.1	25 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
d5-EtFOSAA	IS	78.1	25 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
13C2-PFUnA	IS	78.3	25 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
13C2-PFDoA	IS	77.5	25 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
d3-MeFOSA	IS	15.8	10 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
13C2-PFTeDA	IS	83.6	25 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
d5-EtFOSA	IS	15.1	10 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
d7-MeFOSE	IS	36.9	10 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1
d9-EtFOSE	IS	36.1	10 - 150		B22F069	23-Jun-22	0.247 L	27-Jun-22 18:39	1

MDL - Method Detection Limit RL - Reporting limit Results reported to MDL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: MW-51A **PFAS Isotope Dilution Method**

Client Data
Name: A1CEM
Project: CVRA
Matrix: AqQeoOs
Date Collected: 07-JQu-22 HHHD

Laboratory Data
Lab Sample: 2206072-02
Date Recei9ed: 04-JQu-22 04:v3
ColQmu: n1B CH8

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
P5nA	v73-22-.	33F7	HH00	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
P5PeA	2706-40-v	H H0	0F7. 7	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
P5nS	v73-7v-3	2HH4	0H846	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
. :2 5TS	737H2. -72-.	<0H4. H	0H4. H	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
P5BxA	v07-2. -.	H HH	0H807	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
P5PeS	2706-4H-.	2H22	0H8H2	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
B5PE-DA	Hv232-Hv-6	<HH33	HH33	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
P5BpA	v73-83-4	. IBH	0H426	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
ADENA	4HH003-H -.	<0H6v.	0H6v.	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
P5BxS	v33-. 6-.	6F 8	HH02	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
6:2 5TS	276H4-47-2	<HHHH	HHHH	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
P5EA	vv3-67-H	H H0	0H4. 3	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
P5BpS	v73-42-8	<0H384	0H384	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
P5NA	v73-43-H	<0F7. 7	0F7. 7	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
P5ESA	73. -4H-6	2HH4	HH08	HH48	Q	n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
P5ES	H76v-2v-H	2HH	HHH2	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
4Cl-P5vENS	736. 26-38-H	<HH03	HH03	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
P5DA	vv3-76-2	<0H4v6	0H4v6	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
8:2 5TS	v4HD8-v. -.	<HHH2	HHH2	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
P5NS	68234-H2-H	<HHH	HHH	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
Me5ESAA	2v33-vH-4	<0H4. H	0H4. H	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
1t5ESAA	244H-30-6	<HH0v	HH0v	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
P5UuA	2038-4. -8	<0H7. 7	0H7. 7	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
P5DS	vv3-77-v	<0H732	0H732	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
HHCl-P5vEUdS	76v03H-42-4	<0H480	0H480	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
P5DoA	v07-33-H	<0H463	0H463	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
Me5ESA	vHB06-v2-8	<2H22	2H22	2F 8		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
P5TrDA	72624-4. -8	<0H6. 8	0H6. 8	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
P5DoS	74780-v4-3	<HE 0	HE 0	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
P5TeDA	v76-06-7	<0H807	0H807	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
1t5ESA	. HBH-30-2	<2Hv0	2Hv0	2F 8		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
Me5ES1	2. . . 8-04-7	<HH48	HH48	2F 8		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
1t5ES1	H64H-44-2	<HH33	HH33	HH48		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
HvCv-P5nA	IS	8vE2	23 - HB0		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
HvCv-P5PeA	IS	86F7	23 - HB0		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H
HvCv-P5nS	IS	8. F7	23 - HB0		n225064	2v-JQu-22	0E23v L	27-JQu-22 H8:30	H

Sample ID: MW-51A **PFAS Isotope Dilution Method**

Client Data

Name: A1CEM
Project: CVRA
Matrix: AqQeoOs
Date Collected: 07-JQu-22 HHHD

Laboratory Data

Lab Sample: 2206072-02
Date Recei9ed: 04-JQu-22 04:v3
ColQmu: n1B CH8

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
HvC2-. :2 5TS	IS	84f0	23 - HB0		n225064	2v-JQu-22	0E3v L	27-JQu-22 H8:30	H
HvC2-P5BxA	IS	8. IH	23 - HB0		n225064	2v-JQu-22	0E3v L	27-JQu-22 H8:30	H
HvCv-B5PE-DA	IS	7vF4	23 - HB0		n225064	2v-JQu-22	0E3v L	27-JQu-22 H8:30	H
HvC. -P5BpA	IS	87Fv	23 - HB0		n225064	2v-JQu-22	0E3v L	27-JQu-22 H8:30	H
HvCv-P5BxS	IS	8HE2	23 - HB0		n225064	2v-JQu-22	0E3v L	27-JQu-22 H8:30	H
HvC2-6:2 5TS	IS	83f0	23 - HB0		n225064	2v-JQu-22	0E3v L	27-JQu-22 H8:30	H
HvC2-P5EA	IS	82Fv	23 - HB0		n225064	2v-JQu-22	0E3v L	27-JQu-22 H8:30	H
HvC3-P5NA	IS	8vf8	23 - HB0		n225064	2v-JQu-22	0E3v L	27-JQu-22 H8:30	H
HvC8-P5ESA	IS	3. Fv	HD - HB0		n225064	2v-JQu-22	0E3v L	27-JQu-22 H8:30	H
HvC8-P5ES	IS	4HHH	23 - HB0		n225064	2v-JQu-22	0E3v L	27-JQu-22 H8:30	H
HvC2-P5DA	IS	8. F	23 - HB0		n225064	2v-JQu-22	0E3v L	27-JQu-22 H8:30	H
HvC2-8:2 5TS	IS	88E2	23 - HB0		n225064	2v-JQu-22	0E3v L	27-JQu-22 H8:30	H
dv-Me5ESAA	IS	82FB	23 - HB0		n225064	2v-JQu-22	0E3v L	27-JQu-22 H8:30	H
d3-1t5ESAA	IS	80E2	23 - HB0		n225064	2v-JQu-22	0E3v L	27-JQu-22 H8:30	H
HvC2-P5UuA	IS	78E2	23 - HB0		n225064	2v-JQu-22	0E3v L	27-JQu-22 H8:30	H
HvC2-P5DoA	IS	82F4	23 - HB0		n225064	2v-JQu-22	0E3v L	27-JQu-22 H8:30	H
dv-Me5ESA	IS	2vf6	HD - HB0		n225064	2v-JQu-22	0E3v L	27-JQu-22 H8:30	H
HvC2-P5TeDA	IS	80F	23 - HB0		n225064	2v-JQu-22	0E3v L	27-JQu-22 H8:30	H
d3-1t5ESA	IS	20FH	HD - HB0		n225064	2v-JQu-22	0E3v L	27-JQu-22 H8:30	H
d7-Me5ES1	IS	. 2FH	HD - HB0		n225064	2v-JQu-22	0E3v L	27-JQu-22 H8:30	H
d4-1t5ES1	IS	. . Fv	HD - HB0		n225064	2v-JQu-22	0E3v L	27-JQu-22 H8:30	H

MDL - Method Detectiou Limit RL - Reportiug limit ResQlts reported to MDLF

Wheu reported, P5BxS, P5EA, P5ES, Me5ESAA aud 1t5ESAA iuclQde both liuear aud brauched isomersF Euly the liuear isomer is reported for all other aualytesF

Sample ID: MW-51A DLp **Fs AS Iurtrpe DilLtirn Methrd**

Client Data
Name: AECOM
Project: CVRA
Matrix: Aqueous
Date Collected: 07-Jun-22 11:10

baoryatryP Data
Lab Sample: 2206072-03
Date Received: 09-Jun-22 09:35
Column: BEH C18

AnalPte	CAS NLmoey	Crnc. (ng/b)	MDb	Rb	QLalifieyu	Batch	Extyacted	Samp Size	AnalPzed	DilLtirn
PFBA	375-22-4	57.1	1.00	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
PFPeA	2706-90-3	14.2	0.747	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
PFBS	375-73-5	21.6	0.896	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
4:2 FTS	757124-72-4	<0.940	0.940	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
PFHxA	307-24-4	14.3	0.807	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
PFPeS	2706-91-4	2.00	0.812	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
HFPO-DA	13252-13-6	<1.55	1.55	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
PFHpA	375-85-9	3.78	0.926	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
ADONA	919005-14-4	<0.634	0.634	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
PFHxS	355-46-4	6.64	1.02	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
6:2 FTS	27619-97-2	<1.11	1.11	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
PFOA	335-67-1	13.2	0.945	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
PFHpS	375-92-8	<0.589	0.589	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
PFNA	375-95-1	<0.747	0.747	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
PFOSA	754-91-6	2.45	1.08	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
PFOS	1763-23-1	2.41	1.12	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
9Cl-PF3ONS	756426-58-1	<1.05	1.05	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
PFDA	335-76-2	<0.936	0.936	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
8:2 FTS	39108-34-4	<1.12	1.12	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
PFNS	68259-12-1	<1.14	1.14	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
MeFOSAA	2355-31-9	<0.940	0.940	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
EtFOSAA	2991-50-6	<1.03	1.03	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
PFUnA	2058-94-8	<0.747	0.747	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
PFDS	335-77-3	<0.752	0.752	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
11Cl-PF3OUdS	763051-92-9	<0.980	0.980	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
PFDoA	307-55-1	<0.965	0.965	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
MeFOSA	31506-32-8	<2.22	2.22	2.47		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
PFTrDA	72629-94-8	<0.648	0.648	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
PFDoS	79780-39-5	<1.40	1.40	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
PFTeDA	376-06-7	<0.807	0.807	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
EtFOSA	4151-50-2	<2.30	2.30	2.47		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
MeFOSE	24448-09-7	<1.98	1.98	2.47		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
EtFOSE	1691-99-2	<1.55	1.55	1.98		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1

baoeled Standaydu	TPpe	% RecrveyP	bimitu	QLalifieyu	Batch	Extyacted	Samp Size	AnalPzed	DilLtirn
13C3-PFBA	IS	77.5	25 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
13C3-PFPeA	IS	78.7	25 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
13C3-PFBS	IS	75.2	25 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1

Sample ID: MW-51A DLp **Fs AS Iurtrpe DilLtirn Methrd**

Client Data
Name: AECOM
Project: CVRA
Matrix: Aqueous
Date Collected: 07-Jun-22 11:10

baoryatryP Data
Lab Sample: 2206072-03
Date Received: 09-Jun-22 09:35
Column: BEH C18

baoeled Standaydu	TPpe	% RecrveyP	bimitu	QLalifieyu	Batch	Extyacted	Samp Size	AnalPzed	DilLtirn
13C2-4:2 FTS	IS	91.3	25 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
13C2-PFHxA	IS	79.9	25 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
13C3-HFPO-DA	IS	72.6	25 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
13C4-PFHpA	IS	82.1	25 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
13C3-PFHxS	IS	72.9	25 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
13C2-6:2 FTS	IS	70.9	25 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
13C2-PFOA	IS	82.4	25 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
13C5-PFNA	IS	79.5	25 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
13C8-PFOSA	IS	56.1	10 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
13C8-PFOS	IS	89.8	25 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
13C2-PFDA	IS	79.3	25 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
13C2-8:2 FTS	IS	75.9	25 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
d3-MeFOSAA	IS	70.9	25 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
d5-EtFOSAA	IS	73.9	25 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
13C2-PFUnA	IS	78.3	25 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
13C2-PFDoA	IS	73.4	25 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
d3-MeFOSA	IS	23.1	10 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
13C2-PFTeDA	IS	74.2	25 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
d5-EtFOSA	IS	19.4	10 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
d7-MeFOSE	IS	40.2	10 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1
d9-EtFOSE	IS	43.6	10 - 150		B22F069	23-Jun-22	0.253 L	27-Jun-22 19:00	1

MDL - Method Detection Limit RL - Reporting limit Results reported to MDL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: AMW-01 **PFAS Isotope Dilution Method**

Client Data
Name: AECOM
Project: CVRA
Matrix: Aqueous
Date Collected: 07-Jun-22 1v:99

Laboratory Data
Lab Sample: 2206072-03
Date Recei5ed: 0F-Jun-22 0F:v9
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
P. BA	v79-22-3	v4F9	04F89	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
P. PeA	2706-F0-v	F402	047v6	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
P. BS	v79-7v-9	6491	04882	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
3:2 . TS	797123-72-3	<04F26	04F26	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
P. HxA	v07-23-3	7420	047F9	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
P. PeS	2706-F1-3	7409	047FF	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
H. PO-DA	1v292-1v-6	<149v	149v	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
P. HpA	v79-89-F	249F	04F12	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
ADONA	F1F009-13-3	<04623	04623	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
P. HxS	v99-36-3	2740	1400	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
6:2 . TS	2761F-F7-2	F480	1410	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
P. OA	vv9-67-1	14FF	04Fv1	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
P. HpS	v79-F2-8	<04980	04980	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
P. NA	v79-F9-1	<047v6	047v6	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
P. OSA	793-F1-6	<1406	1406	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
P. OS	176v-2v-1	641v	1410	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
FCl-P. vONS	796326-98-1	<1403	1403	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
P. DA	vv9-76-2	<04F21	04F21	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
8:2 . TS	vF108-v3-3	<1411	1411	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
P. NS	6829F-12-1	<141v	141v	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
Me. OSAA	2v99-v1-F	<04F26	04F26	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
Et. OSAA	2FF1-90-6	<1401	1401	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
P. UnA	2098-F3-8	<047v6	047v6	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
P. DS	vv9-77-v	<04731	04731	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
11Cl-P. vOUdS	76v091-F2-F	<04F69	04F69	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
P. DoA	v07-99-1	<04F91	04F91	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
Me. OSA	v1906-v2-8	<2418	2418	2483		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
P. TrDA	7262F-F3-8	<046vF	046vF	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
P. DoS	7F780-vF-9	<14v8	14v8	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
P. TeDA	v76-06-7	<047F9	047F9	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
Et. OSA	3191-90-2	<2427	2427	2483		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
Me. OSE	23338-0F-7	<14F9	14F9	2483		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
Et. OSE	16F1-FF-2	<149v	149v	14F9		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
1vCv-P. BA	IS	874	29 - 190		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
1vCv-P. PeA	IS	F14	29 - 190		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
1vCv-P. BS	IS	874	29 - 190		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1

Sample ID: AMW-01 **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA

Matrix: Aqueous
Date Collected: 07-Jun-22 1v:99

Laboratory Data

Lab Sample: 2206072-03
Date Recei5ed: 0F-Jun-22 0F:v9

Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
1vC2-3:2 . TS	IS	874 8	29 - 190		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
1vC2-P. HxA	IS	874 7	29 - 190		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
1vCv-H. PO-DA	IS	824 9	29 - 190		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
1vC3-P. HpA	IS	F04 6	29 - 190		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
1vCv-P. HxS	IS	F94 2	29 - 190		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
1vC2-6:2 . TS	IS	F24 2	29 - 190		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
1vC2-P. OA	IS	8F4 2	29 - 190		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
1vC9-P. NA	IS	8v4 8	29 - 190		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
1vC8-P. OSA	IS	914 1	10 - 190		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
1vC8-P. OS	IS	F04 7	29 - 190		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
1vC2-P. DA	IS	8F4 F	29 - 190		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
1vC2-8:2 . TS	IS	F04 F	29 - 190		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
dv-Me. OSAA	IS	874 1	29 - 190		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
d9-Et. OSAA	IS	764 0	29 - 190		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
1vC2-P. UnA	IS	824 7	29 - 190		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
1vC2-P. DoA	IS	7v4 8	29 - 190		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
dv-Me. OSA	IS	740 0	10 - 190	H	B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
1vC2-P. TeDA	IS	3F4 8	29 - 190		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
d9-Et. OSA	IS	940 0	10 - 190	H	B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
d7-Me. OSE	IS	214 6	10 - 190		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1
dF-Et. OSE	IS	204 8	10 - 190		B22. 06F	2v-Jun-22	04296 L	28-Jun-22 16:3v	1

MDL - Method Detection Limit RL - Reporting limit Results reported to MDL4

When reported, P. HxS, P. OA, P. OS, Me. OSAA and Et. OSAA include both linear and branched isomers4 Only the linear isomer is reported for all other analytes4

Sample ID: AMW-02 **PFAS Isotope Dilution Method**

Client Data
Name: AECOM
Project: CVRA

Matrix: AsueouJ
Date Collected: 07-9un-22 81:40

Laboratory Data
Lab Sample: 2206072-01
Date Received: 03-9un-22 03:41

Column: BEH C8q

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
P5BA	471-22-.	T8E .	8E .	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
P5PeA	2706-30-4	T8I0q	8I0q	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
P5BS	471-74-1	T8E23	8E23	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
. :2 5<S	71782. -72-.	T8H41	8H41	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
P5HxA	407-2. -.	T8I86	8I86	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
P5PeS	2706-38-.	T8I87	8I87	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
H5PO-DA	84212-84-6	T2E24	2E24	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
P5HpA	471-q1-3	T8H44	8H44	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
ADONA	383001-8. -.	T0E382	0E382	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
P5HxS	411-. 6-.	2I8q	8E 7	2Eq1	9	B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
6:2 5<S	27683-37-2	T8I60	8I60	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
P5OA	441-67-8	8H 1	8H46	2Eq1	9	B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
P5HpS	471-32-q	T0Eq. q	0Eq. q	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
P5NA	471-31-8	T8I0q	8I0q	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
P5OSA	71. -38-6	6E3q	8H 1	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
P5OS	8764-24-8	. F73	8I68	2Eq1	Q	B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
3Cl-P54ONS	716. 26-1q-8	T8H 2	8H 2	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
P5DA	441-76-2	T8H41	8H41	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
q:2 5<S	4380q-4. -.	T8I62	8I62	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
P5NS	6q213-82-8	T8I61	8I61	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
Me5OSAA	2411-48-3	T8H41	8H41	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
Et5OSAA	2338-10-6	T8E q	8E q	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
P5UnA	201q-3. -q	T8I0q	8I0q	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
P5DS	441-77-4	T8I0q	8I0q	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
88Cl-P54OUdS	764018-32-3	T8E 8	8E 8	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
P5DoA	407-11-8	T8H43	8H43	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
Me5OSA	48106-42-q	T4I83	4I83	4H 6		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
P5<rDA	72623-3. -q	T0E34.	0E34.	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
P5DoS	737q0-43-1	T2I02	2I02	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
P5<eDA	476-06-7	T8I86	8I86	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
Me5OSE	2. . . q-03-7	T2Eq1	2Eq1	4H 6		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
Et5OSE	8638-33-2	T2E2.	2E2.	2Eq1		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
84C4-P5BA	IS	83I4	21 - 810	H	B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
84C4-P5PeA	IS	4. Eq	21 - 810		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
84C4-P5BS	IS	. 0I8	21 - 810		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
84C2-. :2 5<S	IS	. 7E3	21 - 810		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8

Sample ID: AMW-02 **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA

Matrix: AsueouJ
Date Collected: 07-9un-22 81:40

Laboratory Data

Lab Sample: 2206072-01
Date Received: 03-9un-22 03:41

Column: BEH C8q

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
84C2-P5HxA	IS	. 8E2	21 - 810		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
84C4-H5PO-DA	IS	4qI6	21 - 810		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
84C. -P5HpA	IS	. 1H	21 - 810		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
84C4-P5HxS	IS	. 6I6	21 - 810		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
84C2-6:2 5<S	IS	. 2E3	21 - 810		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
84C2-P5OA	IS	. . I0	21 - 810		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
84C1-P5NA	IS	. 7I6	21 - 810		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
84Cq-P5OSA	IS	48I8	80 - 810		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
84Cq-P5OS	IS	14I0	21 - 810		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
84C2-P5DA	IS	. 3E3	21 - 810		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
84C2-q:2 5<S	IS	. 8E3	21 - 810		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
d4-Me5OSAA	IS	43I8	21 - 810		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
d1-Et5OSAA	IS	43I8	21 - 810		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
84C2-P5UnA	IS	. 7I8	21 - 810		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
84C2-P5DoA	IS	4qE2	21 - 810		B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
d4-Me5OSA	IS	8E20	80 - 810	H	B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
84C2-P5<eDA	IS	80I8	21 - 810	H	B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
d7-Me5OSE	IS	3I80	80 - 810	H	B225063	24-9un-22	0E871 L	27-9un-22 83:14	8
d3-Et5OSE	IS	1I60	80 - 810	H	B225063	24-9un-22	0E871 L	27-9un-22 83:14	8

MDL - Method Detection Limit RL - Reporting limit ReJultJ reported to MDLF

When reported, P5HxS, P5OA, P5OS, Me5OSAA and Et5OSAA include both linear and branched iJomerJF Only the linear iJomer iJ reported for all other analyteJF

Sample ID: EB-060722 **PFAS Isotope Dilution Method**

Client Data
Name: A3CEM
Project: CVRA
Matrix: A8OeoOq
Date Collected: 07-sOu-22 H2:J0

Laboratory Data
Lab Sample: 2206072-06
Date Received: 09-sOu-22 09:5F
ColOmu: n3B CHl

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
P. nA	57F-22-J	T0491J	0491J	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
P. PeA	2706-90-5	T04756	04756	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
P. nS	57F-75-F	T0411 2	0411 2	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
J:2 . <S	7F7H2J-72-J	T0426	0426	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
P. BxA	507-2J-J	T0479J	0479J	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
P. PeS	2706-9H-J	T04799	04799	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
B. PE-DA	H52F2-H5-6	TH4F5	H4F5	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
P. BpA	57F-1F-9	T049HH	049HH	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
ADENA	9H900F-H7-J	T0462J	0462J	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
P. BxS	5FF-J6-J	TH400	H400	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
6:2 . <S	276H9-97-2	TH4H0	H4H0	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
P. EA	55F-67-H	T0495H	0495H	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
P. BpS	57F-92-1	T04F10	04F10	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
P. NA	57F-9F-H	T04756	04756	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
P. ESA	7FJ-9H-6	TH406	H406	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
P. ES	H765-25-H	TH4H0	H4H0	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
9Cl-P. 5ENS	7F6J26-F1-H	TH40J	H40J	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
P. DA	55F-76-2	T0492H	0492H	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
1:2 . <S	59H01-5J-J	TH4HH	H4HH	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
P. NS	612F9-H2-H	TH4H5	H4H5	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
Me. ESAA	25FF-5H-9	T0426	0426	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
3t. ESAA	299H-F0-6	TH40H	H40H	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
P. UuA	20F1-9J-1	T04756	04756	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
P. DS	55F-77-5	T047JH	047JH	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
HHCl-P. 5EUdS	7650FH-92-9	T0496F	0496F	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
P. DoA	507-FF-H	T049F0	049F0	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
Me. ESA	5HF06-52-1	T24H1	24H1	24lJ		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
P. <rDA	72629-9J-1	T04651	04651	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
P. DoS	79710-59-F	TH451	H451	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
P. <eDA	576-06-7	T0479J	0479J	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
3t. ESA	JHFH-F0-2	T2427	2427	24lJ		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
Me. ES3	2JJJ1-09-7	TH49F	H49F	24lJ		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
3t. ES3	H69H-99-2	TH4F5	H4F5	H9F		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
H5C5-P. nA	IS	1F4l	2F - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
H5C5-P. PeA	IS	1F46	2F - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
H5C5-P. nS	IS	1141	2F - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H

Sample ID: EB-060722 **PFAS Isotope Dilution Method**

Client Data
Name: A3CEM
Project: CVRA
Matrix: A8OeoOq
Date Collected: 07-sOu-22 H2:J0

Laboratory Data
Lab Sample: 2206072-06
Date Received: 09-sOu-22 09:5F
ColOmu: n3B CHl

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
H5C2-J:2 . <S	IS	9F49	2F - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
H5C2-P. BxA	IS	174l	2F - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
H5C5-B. PE-DA	IS	1749	2F - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
H5CJ-P. BpA	IS	9245	2F - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
H5C5-P. BxS	IS	1642	2F - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
H5C2-6:2 . <S	IS	714H	2F - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
H5C2-P. EA	IS	1F46	2F - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
H5CF-P. NA	IS	124l	2F - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
H5C1-P. ESA	IS	6246	HD - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
H5C1-P. ES	IS	HD2	2F - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
H5C2-P. DA	IS	1J47	2F - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
H5C2-1:2 . <S	IS	7147	2F - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
d5-Me. ESAA	IS	164F	2F - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
dF-3t. ESAA	IS	124H	2F - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
H5C2-P. UuA	IS	1140	2F - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
H5C2-P. DoA	IS	164F	2F - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
d5-Me. ESA	IS	2J4H	HD - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
H5C2-P. <eDA	IS	7742	2F - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
dF-3t. ESA	IS	2246	HD - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
d7-Me. ES3	IS	J54l	HD - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H
d9-3t. ES3	IS	J24l	HD - HF0		n22. 069	25-sOu-22	042F7 L	27-sOu-22 20:05	H

MDL - Method Detectiou Limit RL - Reportiug limit ReqOltq reported to MDL4

Wheu reported, P. BxS, P. EA, P. ES, Me. ESAA aud 3t. ESAA iuclOle both liuear aud brauched iqomerq4 Euly the liuear iqomer iq reported for all other aualyteq4

Sample ID: AMW-05 **PFAS Isotope Dilution Method**

Client Data
Name: A3CEM
Project: CVRA
Matrix: A8OeoOq
Date Collected: 07-sOu-22 H7:J0

Laboratory Data
Lab Sample: 2206072-07
Date Received: 09-sOu-22 09:J5
ColOmu: n3B CHl

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFnA	J75-22-4	22.7	H0J	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
PFPeA	2706-90-J	5HJ	0.767	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
PFnS	J75-7J-5	65.4	0.920	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
4:2 FTS	757H24-72-4	<0.965	0.965	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
PFBxA	J07-24-4	241	0.121	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
PFPeS	2706-9H-4	HJ9	0.1JJ	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
BFPE-DA	HJ252-HJ-6	<H59	H59	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
PFBpA	J75-15-9	70.6	0.950	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
ADENA	9HD005-H4-4	<0.650	0.650	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
PFBxS	J55-46-4	J6HD	5.2J	HD.2	D	n22F069	2J-sOu-22	0.246 L	29-sOu-22 H7:24	5
6:2 FTS	276HD-97-2	9J.5	HH4	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
PFEA	JJ5-67-H	55J	0.97H	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
PFBpS	J75-92-1	90.J	0.605	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
PFNA	J75-95-H	5.9H	0.767	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
PFESA	754-9H-6	60H	HHH	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
PFES	H76J-2J-H	JH60	5.74	HD.2	D	n22F069	2J-sOu-22	0.246 L	29-sOu-22 H7:24	5
9Cl-PFJENS	756426-51-H	<H01	H01	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
PFDA	JJ5-76-2	<0.960	0.960	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
1:2 FTS	J9HD1-J4-4	7.JJ	HH5	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
PFNS	61259-H2-H	<HH7	HH7	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
MeFESAA	2J55-JH-9	<0.965	0.965	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
3tFESAA	299H-50-6	<H06	H06	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
PFUuA	2051-94-1	<0.767	0.767	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
PFDS	JJ5-77-J	<0.772	0.772	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
HHCl-PFJEUdS	76J05H-92-9	<H0H	H0H	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
PFDoA	J07-55-H	<0.99H	0.99H	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
MeFESA	JH506-J2-1	<2.21	2.21	2.54		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
PFTrDA	72629-94-1	<0.666	0.666	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
PFDoS	79710-J9-5	<H44	H44	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
PFTeDA	J76-06-7	<0.121	0.121	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
3tFESA	4H5H-50-2	<2.J6	2.J6	2.54		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
MeFES3	24441-09-7	<2.0J	2.0J	2.54		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
3tFES3	H69H-99-2	<H60	H60	2.0J		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
HJCJ-PFnA	IS	14.0	25 - H50		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
HJCJ-PFPeA	IS	12.6	25 - H50		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
HJCJ-PFnS	IS	71.0	25 - H50		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H

Sample ID: AMW-05 **PFAS Isotope Dilution Method**

Client Data

Name: A3CEM
Project: CVRA
Matrix: A8OeoOq
Date Collected: 07-sOu-22 H7:J0

Laboratory Data

Lab Sample: 2206072-07
Date Received: 09-sOu-22 09:J5
ColOmu: n3B CHl

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
HJC2-4:2 FTS	IS	9H5	25 - H50		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
HJC2-PFBxA	IS	1H0	25 - H50		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
HJCJ-BFPE-DA	IS	7H5	25 - H50		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
HJC4-PFBpA	IS	15.H	25 - H50		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
HJCJ-PFBxS	IS	16.0	25 - H50	D	n22F069	2J-sOu-22	0.246 L	29-sOu-22 H7:24	5
HJC2-6:2 FTS	IS	74.9	25 - H50		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
HJC2-PFEA	IS	10.J	25 - H50		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
HJC5-PFNA	IS	1H0	25 - H50		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
HJC1-PFESA	IS	47.5	HD - H50		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
HJC1-PFES	IS	12.0	25 - H50	D	n22F069	2J-sOu-22	0.246 L	29-sOu-22 H7:24	5
HJC2-PFDA	IS	14.2	25 - H50		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
HJC2-1:2 FTS	IS	12.7	25 - H50		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
dJ-MeFESAA	IS	90.6	25 - H50		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
d5-3tFESAA	IS	69.2	25 - H50		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
HJC2-PFUuA	IS	1J.6	25 - H50		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
HJC2-PFDoA	IS	12.2	25 - H50		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
dJ-MeFESA	IS	H4.9	HD - H50		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
HJC2-PFTeDA	IS	77.5	25 - H50		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
d5-3tFESA	IS	HJ.6	HD - H50		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
d7-MeFES3	IS	J2.H	HD - H50		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H
d9-3tFES3	IS	J2.7	HD - H50		n22F069	2J-sOu-22	0.246 L	27-sOu-22 20:H4	H

MDL - Method Detectiou Limit RL - Reportiug limit ReqOltq reported to MDL.

Wheu reported, PFBxS, PFEA, PFES, MeFESAA aud 3tFESAA iuclOde both liuear aud brauched iqomerq. Euly the liuear iqomer iq reported for all other aualyteq.

Sample ID: AMW-04 **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA
Matrix: A8ueouq
Date Collected: 03-sun-22 0J:v9

Laboratory Data

Lab Sample: 2206072-03
Date Recei5ed: 0J-sun-22 0J:v9
Column: BEH C13

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	v79-22-4	19.6	0.JJ7	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
PFPeA	2706-J0-v	90.0	0.749	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
PFBS	v79-7v-9	4.33	0.3Jv	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
4:2 FTS	797124-72-4	<0.Jv3	0.Jv3	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
PFHxA	v07-24-4	27.6	0.304	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
PFPeS	2706-J1-4	2.3v	0.30J	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
HFPO-DA	1v292-1v-6	<1.94	1.94	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
PFHpA	v79-39-J	17.v	0.J2v	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
ADONA	J1J009-14-4	<0.6v2	0.6v2	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
PFHxS	v99-46-4	92.2	1.02	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
6:2 FTS	2761J-J7-2	11J	1.11	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
PFOA	vv9-67-1	11.9	0.J4v	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
PFHpS	v79-J2-3	v.90	0.937	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
PFNA	v79-J9-1	<0.749	0.749	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
PFOSA	794-J1-6	1.JJ	1.03	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
PFOS	176v-2v-1	2v0	1.12	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
JCl-PFvONS	796426-93-1	<1.09	1.09	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
PFDA	vv9-76-2	<0.Jvv	0.Jvv	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
3:2 FTS	vJ103-v4-4	<1.12	1.12	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
PFNS	6329J-12-1	<1.14	1.14	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
MeFOSAA	2v99-v1-J	<0.Jv3	0.Jv3	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
EtFOSAA	2JJ1-90-6	<1.0v	1.0v	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
PFUnA	2093-J4-3	<0.749	0.749	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
PFDS	vv9-77-v	<0.790	0.790	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
11Cl-PFvOUdS	76v091-J2-J	<0.J77	0.J77	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
PFDoA	v07-99-1	<0.J62	0.J62	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
MeFOSA	v1906-v2-3	<2.21	2.21	2.47		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
PFTrDA	7262J-J4-3	<0.647	0.647	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
PFDoS	7J730-vJ-9	<1.40	1.40	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
PFTeDA	v76-06-7	<0.304	0.304	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
EtFOSA	4191-90-2	<2.2J	2.2J	2.47		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
MeFOSE	24443-0J-7	<1.J7	1.J7	2.47		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
EtFOSE	16J1-JJ-2	<1.99	1.99	1.J7		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
1vCv-PFBA	IS	33.v	29 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
1vCv-PFPeA	IS	36.0	29 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
1vCv-PFBS	IS	32.1	29 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1

Sample ID: AMW-04 **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA
Matrix: A8ueouq
Date Collected: 03-sun-22 0J:v9

Laboratory Data

Lab Sample: 2206072-03
Date Recei5ed: 0J-sun-22 0J:v9
Column: BEH C13

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
1vC2-4:2 FTS	IS	J6.J	29 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
1vC2-PFHxA	IS	3J.1	29 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
1vCv-HFPO-DA	IS	34.v	29 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
1vC4-PFHpA	IS	J9.7	29 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
1vCv-PFHxS	IS	36.J	29 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
1vC2-6:2 FTS	IS	J9.9	29 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
1vC2-PFOA	IS	33.1	29 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
1vC9-PFNA	IS	39.7	29 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
1vC3-PFOSA	IS	61.0	10 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
1vC3-PFOS	IS	39.9	29 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
1vC2-PFDA	IS	3J.0	29 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
1vC2-3:2 FTS	IS	JJ.7	29 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
dv-MeFOSAA	IS	31.9	29 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
d9-EtFOSAA	IS	7J.v	29 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
1vC2-PFUnA	IS	3v.7	29 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
1vC2-PFDoA	IS	3J.7	29 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
dv-MeFOSA	IS	22.2	10 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
1vC2-PFTeDA	IS	77.9	29 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
d9-EtFOSA	IS	21.4	10 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
d7-MeFOSE	IS	4v.9	10 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1
dJ-EtFOSE	IS	49.4	10 - 190		B22F06J	2v-sun-22	0.29v L	23-sun-22 17:04	1

MDL - Method Detection Limit RL - Reporting limit Requltq reported to MDL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched iqomerq. Only the linear iqomer iq reported for all other analyteq.

Sample ID: AMW-03 **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA
Matrix: Aqueous
Date Collected: 08-Jun-22 11:10

Laboratory Data

Lab Sample: 2206072-03
Date Received: 03-Jun-22 03:95
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	975-22-4	1120	1.01	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
PFPeA	2706-30-9	6040	90.1	73.7	D	B22F063	29-Jun-22	0.251 L	90-Jun-22 16:08	40
PFBS	975-79-5	594	0.302	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
4:2 FTS	757124-72-4	257	0.347	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
PFHxA	907-24-4	9270	92.5	73.7	D	B22F063	29-Jun-22	0.251 L	90-Jun-22 16:08	40
PFPeS	2706-31-4	731	0.817	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
HFPO-DA	19252-19-6	<1.56	1.56	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
PFHpA	975-85-3	1220	0.392	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
ADONA	313005-14-4	<0.698	0.698	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
PFHxS	955-46-4	7080	41.1	73.7	D	B22F063	29-Jun-22	0.251 L	90-Jun-22 16:08	40
6:2 FTS	27613-37-2	12800	44.8	73.7	D	B22F063	29-Jun-22	0.251 L	90-Jun-22 16:08	40
PFOA	995-67-1	1020	0.352	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
PFHpS	975-32-8	279	0.539	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
PFNA	975-35-1	11.8	0.752	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
PFOSA	754-31-6	<1.03	1.03	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
PFOS	1769-29-1	5290	45.0	73.7	D	B22F063	29-Jun-22	0.251 L	90-Jun-22 16:08	40
3Cl-PF9ONS	756426-58-1	<1.06	1.06	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
PFDA	995-76-2	<0.342	0.342	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
8:2 FTS	93108-94-4	2.02	1.19	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
PFNS	68253-12-1	<1.15	1.15	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
MeFOSAA	2955-91-3	<0.347	0.347	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
EtFOSAA	2331-50-6	<1.04	1.04	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
PFUnA	2058-34-8	<0.752	0.752	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
PFDS	995-77-9	<0.757	0.757	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
11Cl-PF9OUdS	769051-32-3	<0.386	0.386	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
PFDoA	907-55-1	<0.372	0.372	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
MeFOSA	91506-92-8	<2.29	2.29	2.43		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
PFTrDA	72623-34-8	<0.659	0.659	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
PFDoS	73780-93-5	<1.41	1.41	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
PFTeDA	976-06-7	<0.812	0.812	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
EtFOSA	4151-50-2	<2.92	2.92	2.43		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
MeFOSE	24448-03-7	<1.33	1.33	2.43		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
EtFOSE	1631-33-2	<1.56	1.56	1.33		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
19C9-PFBA	IS	72.0	25 - 150		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
19C9-PFPeA	IS	80.0	25 - 150	D	B22F063	29-Jun-22	0.251 L	90-Jun-22 16:08	40
19C9-PFBS	IS	70.0	25 - 150		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1

Sample ID: AMW-03 **PFAS Isotope Dilution Method**

Client Data
Name: AECOM
Project: CVRA
Matrix: Aqueous
Date Collected: 08-Jun-22 11:10

Laboratory Data
Lab Sample: 2206072-03
Date Received: 03-Jun-22 03:95
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
19C2-4:2 FTS	IS	74.3	25 - 150		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
19C2-PFHxA	IS	36.0	25 - 150	D	B22F063	29-Jun-22	0.251 L	90-Jun-22 16:08	40
19C9-HFPO-DA	IS	68.1	25 - 150		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
19C4-PFHpA	IS	64.9	25 - 150		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
19C9-PFHxS	IS	64.0	25 - 150	D	B22F063	29-Jun-22	0.251 L	90-Jun-22 16:08	40
19C2-6:2 FTS	IS	204	25 - 150	DhH	B22F063	29-Jun-22	0.251 L	90-Jun-22 16:08	40
19C2-PFOA	IS	68.2	25 - 150		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
19C5-PFNA	IS	77.2	25 - 150		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
19C8-PFOSA	IS	43.1	10 - 150		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
19C8-PFOS	IS	56.0	25 - 150	D	B22F063	29-Jun-22	0.251 L	90-Jun-22 16:08	40
19C2-PFDA	IS	81.2	25 - 150		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
19C2-8:2 FTS	IS	84.0	25 - 150		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
d9-MeFOSAA	IS	75.8	25 - 150		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
d5-EtFOSAA	IS	62.9	25 - 150		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
19C2-PFUnA	IS	76.4	25 - 150		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
19C2-PFDoA	IS	67.5	25 - 150		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
d9-MeFOSA	IS	15.8	10 - 150		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
19C2-PFTeDA	IS	49.9	25 - 150		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
d5-EtFOSA	IS	12.9	10 - 150		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
d7-MeFOSE	IS	92.3	10 - 150		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1
d3-EtFOSE	IS	91.8	10 - 150		B22F063	29-Jun-22	0.251 L	27-Jun-22 20:95	1

MDL - MetWod Detection Limit RL - Reporting limit Results reported to MDL.

, Wen reportedhPFHxShPFOAhPFOShMeFOSAA and EtFOSAA include botW linear and brancWed isomers. Only tWe linear isomer is reported for all otWer analytes.

Sample ID: AB-060822 **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA
Matrix: A8ueouq
Date Collected: 01-sun-22 33:J0

Laboratory Data

Lab Sample: 2206072-30
Date Received: 09-sun-22 09:J5
Column: BEH C31

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	J75-22-T	40.915	0.915	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
PFPeA	2706-90-J	40.7J7	0.7J7	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
PFBS	J75-7J-5	40.11J	0.11J	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
T:2 F<S	75732T-72-T	40.927	0.927	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
PFHxA	J07-2T-T	40.795	0.795	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
PFPeS	2706-93-T	40.100	0.100	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
HFPO-DA	3J252-3J-6	43.5J	3.5J	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
PFHpA	J75-15-9	40.932	0.932	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
ADONA	939005-3T-T	40.62T	0.62T	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
PFHxS	J55-T6-T	43.00	3.00	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
6:2 F<S	27639-97-2	43.30	3.30	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
PFOA	JJ5-67-3	40.9J2	0.9J2	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
PFHpS	J75-92-1	40.513	0.513	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
PFNA	J75-95-3	40.7J7	0.7J7	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
PFOSA	75T-93-6	43.06	3.06	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
PFOS	376J-2J-3	43.30	3.30	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
9Cl-PFJONS	756T26-51-3	43.0T	3.0T	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
PFDA	JJ5-76-2	40.922	0.922	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
1:2 F<S	J9301-JT-T	43.33	3.33	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
PFNS	61259-32-3	43.3J	3.3J	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
MeFOSAA	2J55-J3-9	40.927	0.927	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
EtFOSAA	2993-50-6	43.03	3.03	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
PFUnA	2051-9T-1	40.7J7	0.7J7	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
PFDS	JJ5-77-J	40.7T2	0.7T2	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
33Cl-PFJOUdS	76J053-92-9	40.966	0.966	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
PFDoA	J07-55-3	40.953	0.953	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
MeFOSA	J3506-J2-1	42.39	2.39	2.TT		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
PF<rDA	72629-9T-1	40.6J9	0.6J9	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
PFDoS	79710-J9-5	43.J1	3.J1	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
PF<eDA	J76-06-7	40.795	0.795	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
EtFOSA	T353-50-2	42.27	2.27	2.TT		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
MeFOSE	2TTT1-09-7	43.95	3.95	2.TT		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
EtFOSE	3693-99-2	43.5J	3.5J	3.95		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
3JCJ-PFBA	IS	93.T	25 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
3JCJ-PFPeA	IS	93.7	25 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
3JCJ-PFBS	IS	9J.9	25 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3

Sample ID: AB-060822 **PFAS Isotope Dilution Method**

Client Data

Name: AECOM
Project: CVRA
Matrix: A8ueouq
Date Collected: 01-sun-22 33:J0

Laboratory Data

Lab Sample: 2206072-30
Date Received: 09-sun-22 09:J5
Column: BEH C31

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
3JC2-T:2 F<S	IS	90.3	25 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
3JC2-PFHxA	IS	96.2	25 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
3JCJ-HFPO-DA	IS	10.7	25 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
3JCT-PFHpA	IS	302	25 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
3JCJ-PFHxS	IS	303	25 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
3JC2-6:2 F<S	IS	97.T	25 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
3JC2-PFOA	IS	97.9	25 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
3JC5-PFNA	IS	96.5	25 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
3JC1-PFOSA	IS	T9.5	30 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
3JC1-PFOS	IS	91.6	25 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
3JC2-PFDA	IS	9T.9	25 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
3JC2-1:2 F<S	IS	99.2	25 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
dJ-MeFOSAA	IS	73.6	25 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
d5-EtFOSAA	IS	10.J	25 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
3JC2-PFUnA	IS	19.9	25 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
3JC2-PFDoA	IS	13.2	25 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
dJ-MeFOSA	IS	39.T	30 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
3JC2-PF<eDA	IS	79.2	25 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
d5-EtFOSA	IS	37.9	30 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
d7-MeFOSE	IS	T2.7	30 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3
d9-EtFOSE	IS	TJ.0	30 - 350		B22F069	2J-sun-22	0.256 L	21-sun-22 37:25	3

MDL - Method Detection Limit RL - Reporting limit Requltq reported to MDL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched iqomerq. Only the linear iqomer iq reported for all other analyteq.

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
CRS	Cleanup Recovery Standard
D	Dilution
DL	Detection Limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
IS	Internal Standard
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limit of Detection
LOQ	Limit of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
MDL	Method Detection Limit
NA	Not applicable
ND	Not Detected
OPR	Ongoing Precision and Recovery sample
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
RL	Reporting Limit
RL	For 537.1, the reported RLs are the MRLs.
TEQ	Toxic Equivalency, sum of the toxic equivalency factors (TEF) multiplied by the sample concentrations.
TEQMax	TEQ calculation that uses the detection limit as the concentration for non-detects
TEQMin	TEQ calculation that uses zero as the concentration for non-detects
TEQRisk	TEQ calculation that uses ½ the detection limit as the concentration for non-detects
U	Not Detected (specific projects only)
*	See Cover Letter

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	21-023-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2020018
Massachusetts Department of Environmental Protection	M-CA413
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	2211390
New Hampshire Environmental Accreditation Program	207721
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Ohio Environmental Protection Agency	87778
Oregon Laboratory Accreditation Program	4042-021
Pennsylvania Department of Environmental Protection	018
Texas Commission on Environmental Quality	T104704189-22-13
Vermont Department of Health	VT-4042
Virginia Department of General Services	11276
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	**Method**
Determination of Polychlorinated p- Dioxins & Polychlorinated Dibenzofurans	EPA 23
Polychlorinated Dibenzodioxins in Ambient Air by GC/HRMS	EPA TO-9A

MATRIX: Biological Tissue	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	PFAS Isotope Dilution
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613/1613B
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	PFAS Isotope Dilution
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537.1
Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry	EPA 533
Perfluorooctanesulonate (PFOS) and Perfluorooctanoate (PFOA) - Method for Unfiltered Samples Using Solid Phase Extraction and Liquid Chromatography/Mass Spectrometry	ISO 25101 2009

MATRIX: Non-Potable Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	PFAS Isotope Dilution
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	**Method**
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	PFAS Isotope Dilution
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 2206072 Temp: 1.7 °C
Storage ID: R-13, GR-2 Storage Secured: Yes ☑ No ☐

Project ID: CURA PO#: 6001669204 Sampler: Marcus Hopkins (name)

TAT (check one): Standard: ☑ 21 days; Rush (surcharge may apply): ☐ 14 days ☐ 7 days Specify: _____

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Marcus Hopkins Marcus	6/8/22	1710	Transfer to fedex	6/8/22	1700
FedEx	06/09/22	0935	KeliaWadsworth Kelia Wadsworth	06/09/22	0935

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106
ATTN: _____

Method of Shipment: Fedex
Tracking No.: _____

Add Analysis(es) Requested

Sample ID	Date	Time	Location/ Sample Description	Container(s) Quantity	Type	Matrix	PFOA/PFOS	UCMR3 PFAS List:6	537.1 List: 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: (Please attach analyte list)	PFAS by Isotope Dilution: PFOA/PFOS	PFAS by Isotope Dilution: UCMR3 PFAS List:6	PFAS by Isotope Dilution: 537.1 List of 14	PFAS by Isotope Dilution: 537.1 List of 18	EPA Method 537 (DW only)	Comments
MW-55A	6/7/22	0940		2	P	AQ					X						
MW-[redacted]51A	6/7/22	1110		2	P	AQ					X						
MW-51A DUP	6/7/22	1110		2	P	AQ					X						
AMW-01	6/7/22	1355		2	P	AQ					X						
AMW-02	6/7/22	1530		1	P	AQ					X						Insufficient volume.
EB-060722	6/7/22	1240		2	P	AQ					X						
AMW-05	6/7/22	1730		2	P	AQ					X						
AMW-04	6/8/22	0935		2	P	AQ					X						
AMW-03	6/8/22	1110		2	P	AQ					X						
AB-060822	6/8/22	1130		2	P	AQ					X						

Special Instructions/Comment

SEND DOCUMENTATION AND RESULTS TO:
Name: Andrew Moff
Company:
Address:
City: State: Zip:
Phone:
Email: andrewsmoff@acrm.com

Container Types: P = HDPE, PJ = HDPE Jar, PY = Polypropylene, O= Other _____

Bottle Preservation Type: TZ= Trizma: _____

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other _____

Vista Analytical Laboratory

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 2206072 TAT Std

Samples Arrival:	**Date/Time** 06/09/22 0935		**Initials:** KW		**Location:** WR-2 **Shelf/Rack:** N/A		
Delivered By:	(FedEx)	UPS	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	(Ice)		Blue Ice		Techni Ice	Dry Ice	None
Temp °C: 1.8 (uncorrected) **Temp °C:** 1.7 (corrected)			**Probe used: Y / (N)**		**Thermometer ID:** IR-3		

	YES	NO	NA
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?			✓
Airbill — Trk # 8130 1248 1206	✓		
Shipping Documentation Present?	✓		
Shipping Container: Vista / (Client) / Retain / (Return)		Dispose	
Chain of Custody / Sample Documentation Present?	✓		
Chain of Custody / Sample Documentation Complete?	✓		
Holding Time Acceptable?	✓		

Logged In:	**Date/Time** 06/10/22 07:36	**Initials:** KW	**Location:** R-13, WR-2 **Shelf/Rack:** A-3, E-4	
COC Anomaly/Sample Acceptance Form completed?			✓	✓

Comments:

CoC/Label Reconciliation Report WO# 2206072

LabNumber	CoC Sample ID		SampleAlias	Sample Date/Time		Container	BaseMatrix	Sample Comments
2206072-01	A MW-55A	☑		07-Jun-22 09:40	☑	HDPE Bottle, 250 mL	Aqueous	
2206072-01	B MW-55A	☑		07-Jun-22 09:40	☑	HDPE Bottle, 250 mL	Aqueous	
2206072-02	A MW-51A	☑		07-Jun-22 11:10	☑	HDPE Bottle, 250 mL	Aqueous	
2206072-02	B MW-51A	☑		07-Jun-22 11:10	☑	HDPE Bottle, 250 mL	Aqueous	
2206072-03	A MW-51A Dup	☑		07-Jun-22 11:10	☑	HDPE Bottle, 250 mL	Aqueous	
2206072-03	B MW-51A Dup	☑		07-Jun-22 11:10	☑	HDPE Bottle, 250 mL	Aqueous	
2206072-04	A AMW-01	☑		07-Jun-22 13:55	☑	HDPE Bottle, 250 mL	Aqueous	
2206072-04	B AMW-01	☑		07-Jun-22 13:55	☑	HDPE Bottle, 250 mL	Aqueous	
2206072-05	A AMW-02	☑ (A)		07-Jun-22 15:30	☑	HDPE Bottle, 250 mL	Aqueous	
2206072-06	A EB-060722	☑		07-Jun-22 12:40	☑	HDPE Bottle, 250 mL	Aqueous	
2206072-06	B EB-060722	☑		07-Jun-22 12:40	☑	HDPE Bottle, 250 mL	Aqueous	
2206072-07	A AMW-05	☑		07-Jun-22 17:30	☑	HDPE Bottle, 250 mL	Aqueous	
2206072-07	B AMW-05	☑		07-Jun-22 17:30	☑	HDPE Bottle, 250 mL	Aqueous	
2206072-08	A AMW-04	☑		08-Jun-22 09:35	☑	HDPE Bottle, 250 mL	Aqueous	
2206072-08	B AMW-04	☑		08-Jun-22 09:35	☑	HDPE Bottle, 250 mL	Aqueous	
2206072-09	A AMW-03	☑		08-Jun-22 11:10	☑	HDPE Bottle, 250 mL	Aqueous	
2206072-09	B AMW-03	☑		08-Jun-22 11:10	☑	HDPE Bottle, 250 mL	Aqueous	
2206072-10	A AB-060822	☑		08-Jun-22 11:30	☑	HDPE Bottle, 250 mL	Aqueous	
2206072-10	B AB-060822	☑		08-Jun-22 11:30	☑	HDPE Bottle, 250 mL	Aqueous	

Checkmarks indicate that information on the COC reconciled with the sample label.
Any discrepancies are noted in the following columns.

	Yes	No	NA
Sample Container Intact?	✓		
Sample Custody Seals Intact?		✓	✓
Adequate Sample Volume?	✓		
Container Type Appropriate for Analysis(es)	✓		

Comments: (A) No Backup Volume

Preservation Documented: Na2S2O3 Trizma NH4CH3CO2 (None) Other

Verifed by/Date: SH 06/10/22

Appendix B Soil Boring Logs & Borehole Filling and Sealing Reports

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Chippewa Valley Regional Airport (CVRA)		AMW-01

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Adam Horizon Construction and Exploration	5/10/2022	5/10/2022	hollow stem auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			81.00 Feet MSL	890.9 Feet MSL	8.25

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
SW 1/4 of NW 1/4 of Section 33, T 28 N, R 9 W

Lat 44 ° 52 '8.09984"
Long 91 ° 28 58.50321"

Local Grid Location
☐ N ☐ E
Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Chippewa	9	Eau Claire

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	Blind drilled to approximately 70 feet Sand and gravel, brown to tan, dry										
			1											
			2											
			3											
			4											
			5											
			6		SP					Dry				
			7											
			8											
			9											
			10											
			11											
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
Marcus Hopkins	AECOM	Fax:

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number AMW-01 Use only as an attachment to Form 4400-122.

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				Blind drilled to approximately 70 feet										
			13	Sand and gravel, brown to tan, dry *(continued)*	SP					Dry				
			14											
			15											
			16											
			17											
			18											
			19											
			20											
			21											
			22											
			23											
			24											
			25											
			26											
			27											
			28											
			29											
			30											
			31											
			32											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number AMW-01 Use only as an attachment to Form 4400-122.

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			33	Blind drilled to approximately 70 feet Sand and gravel, brown to tan, dry *(continued)*										
			34											
			35											
			36											
			37											
			38											
			39											
			40											
			41		SP					Dry				
			42											
			43											
			44											
			45											
			46											
			47											
			48											
			49											
			50	Sand and gravel, dry										
			51		SP									
			52											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number AMW-01 Use only as an attachment to Form 4400-122.

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			53	Sand and gravel, dry *(continued)*	SP					Dry				
			54											
			55											
			56											
			57											
			58											
			59											
			60											
			61											
			62											
			63											
			64											
			65											
			66											
			67											
			68											
			69											
			70											
			71	Sand, tan, very coarse to find, poorly sorted, trace gravel, compacted	SP					Dry				
			72											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number AMW-01 Use only as an attachment to Form 4400-122.

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			72	Sand, tan, very coarse to find, poorly sorted, trace gravel, compacted *(continued)*						Dry				
			73											
			74											
			75											
			76							Dry				
			77											
			78											
			79		SP									
			80	Becomes moist around 80 feet						Moist				Soil sampled at 80-80.5'
			81	Becomes saturated around 81 feet						Sat				
			82											
			83											
			84											
			85	Sand, tan, very coarse to fine, poorly sorted, trace gravel, saturated, well compacted						Sat				
			86											Bottom of well set at approximately 86 feet bgs with a 10 foot screen
			87		SP									
			88											
			89							Sat				
			90	End of boring at 90 feet bgs										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Chippewa Valley Regional Airport (CVRA)		AMW-02 (First Attempt)

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Adam Horizon Construction and Exploration	5/10/2022	5/10/2022	hollow stem auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	890.3 Feet MSL	8.25

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
SW 1/4 of NW 1/4 of Section 33, T 28 N, R 9 W

Lat 44 ° 52 15.76859 "
Long 91 ° 28 48316601 "

Local Grid Location
☐ N Feet ☐ E
☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Chippewa	9	Eau Claire

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	Blind drilled to 75 feet Sand and gravel, dry	SP									Difficulty drilling due to liquidation of sand
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			10											
			11											
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
Marcus Hopkins	AECOM	Fax:

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number AMW-02 (First Attempt) Use only as an attachment to Form 4400-122.

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			13	Blind drilled to 75 feet Sand and gravel, dry *(continued)*	SP					Dry				
			14											
			15	Sand with gravel and pebbles, saturated, loose										
			16							Sat				
			17		SP									
			18											
			19											
			20	Sand and gravel with abundant pebbles										
			21											
			22							Sat				
			23											
			24											
			25		GP									
			26											
			27											
			28											
			29											
			30	Sand, brown to tan, very poorly sorted, loose, gravelly										
			31		SP					Sat				
			32											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number AMW-02 (First Attempt) Use only as an attachment to Form 4400-122. Page 3 of 5

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			33	Sand, brown to tan, very poorly sorted, loose, gravelly *(continued)*										
			34											
			35							Sat				
			36											
			37											
			38											
			39											
			40											
			41											
			42		SP					Sat				
			43											
			44											
			45											
			46											
			47											
			48											
			49											
			50											
			51											
			52											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number AMW-02 (First Attempt) Use only as an attachment to Form 4400-122. Page 4 of 5

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			53	Sand, brown to tan, very poorly sorted, loose, gravelly *(continued)*						Sat				
			54											
			55											
			56		SP									
			57											
			58											
			59											
			60	Sand, tan, very poorly sorted, loose, gravelly						Sat				
			61											
			62											
			63											
			64											
			65											
			66		SP									
			67											
			68											
			69											
			70											
			71											
			72											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number AMW-02 (First Attempt) Use only as an attachment to Form 4400-122. Page 5 of 5

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			72	Sand, tan, very poorly sorted, loose, gravelly *(continued)*						Sat				
			73											
			74											
			75											
			76											
			77											
			78											
			79											
			80											
			81		SP					Sat				
			82											
			83											
			84											
			85											
			86											
			87											
			88											
			89							Sat				
			90	End of boring at 90 feet bgs *Unable to identify where water table sits due to saturated cuttings from perched water from approximately 15 to 30 feet *Unable to set well, drill auger getting stuck in well, borehole collapsing at approximately 75 feet *Well abandoned										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Chippewa Valley Regional Airport (CVRA)		AMW-02 (Second Attempt)

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Adam Horizon Construction and Exploration	5/11/2022	5/11/2022	hollow stem auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	890.3 Feet MSL	8.25

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
SW 1/4 of NW 1/4 of Section 33, T 28 N, R 9 W

Lat 44 ° 52 15.76859 "
Long 91 ° 28 48316601 "

Local Grid Location
☐ N ☐ E
Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Chippewa	9	Eau Claire

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	Blind Drilling Sand, brown to tan, very poorly sorted, loose, gravelly, dry						Dry				
			6		SP					Dry				

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Marcus Hopkins Firm AECOM Tel: Fax:

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Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number AMW-02 (Second Attempt) Use only as an attachment to Form 4400-122.

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			13	Blind Drilling Sand, brown to tan, very poorly sorted, loose, gravelly, dry *(continued)*	SP					Dry				
			14											
			15	Gravel with pebbles and trace cobbles										Perched water encountered again between 15 to 20 feet bgs
			16											
			17							Sat				
			18											
			19											
			20											
			21											
			22											
			23		GP					Sat				
			24											
			25											
			26											
			27											
			28											
			29											
			30											
			31											
			32							Sat				

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number AMW-02 (Second Attempt) Use only as an attachment to Form 4400-122.

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			33	Gravel with pebbles and trace cobbles *(continued)*	GP					Sat				
			34	End of boring at 34.5 feet bgs *Decision was made to set a shallow well in perched water rather then drill to actual water table										Well with a 10 foot screen set at approximtely 34 ft bgs

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Chippewa Valley Regional Airport (CVRA)		AMW-03

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Adam Horizon Construction and Exploration	5/13/2022	5/13/2022	geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			68.00 Feet MSL	888.2 Feet MSL	2.00

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
SW 1/4 of NW 1/4 of Section 33, T 28 N, R 9 W

Lat 44 ° 52 '4.75885"
Long 91 ° 28 34.66132"

Local Grid Location
☐ N ☐ E
Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Chippewa	9	Eau Claire

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	Topsoil	Topsoil									
			1	Sand, loose, dry, sub angular gravel	SP					Dry				Soil sampled collected at 1-2'
			2											
			3	Sand, brown to tan, medium to very fine, moderately sorted, loose, dry, sub round to subangular trace fine gravel						Dry				
			4											
			5											
			6											
			7		SM									
			8											
			9											
			10	Sand, brown to tan, medium to very fine, moderately sorted, loose, dry, trace fine gravel						Dry				
			11		SM									
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Marcus Hopkins	AECOM	Tel: Fax:

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number AMW-03 Use only as an attachment to Form 4400-122.

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			13	Sand, brown to tan, medium to very fine, moderately sorted, loose, dry, trace fine gravel *(continued)*						Dry				
			14											
			15											
			16		SM									
			17											
			18											
			19											
			20	Sand, tan, coarse to fine, poorly sorted, dry, loose, trace gravel						Dry				
			21											
			22											
			23											
			24											
			25		SP									
			26											
			27											
			28											
			29											
			30	Sand, very coarse to fine, very poorly sorted, dry, loose, trace gravel						Dry				
			31		SP									
			32											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number AMW-03 Use only as an attachment to Form 4400-122. Page 3 of 5

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			33	Sand, very coarse to fine, very poorly sorted, dry, loose, trace gravel *(continued)*	SP					Dry				Soil sampled collected at 35-37'
			34											
			35											
			36											
			37							Dry				
			38											
			39											
			40											
			41	Silt and sand, interbedded, coarse to fine, moderately compacted, moist silt	SW-SM					Moist				
			42											
			43	Sand, tan to brown, coarse to very fine, poorly sorted, dry, compact, trace fine gravel						Dry				
			44											
			45											
			46											
			47		SP									
			48											
			49											
			50	Sand, tan to light brown, very poorly sorted, loose, dry, fine gravel, compacted						Dry				
			51		SP									
			52											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number AMW-03 Use only as an attachment to Form 4400-122. Page 4 of 5

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			53	Sand, tan to light brown, very poorly sorted, loose, dry, fine gravel, compacted *(continued)*	SP					Dry				
			54	Sand, tan, yellowish white, medium to fine, moderately sorted, very compacted	SW									
			56	Silt, brown, trace fine sand, dry, very compacted, hard to geoprobe	SM					Dry				
			58	Split spoon refusal at approximately 58 feet, continue with HSA										
			61							Dry				
			68	Sand, tan, very coarse to fine, poorly sorted, trace gravel, compacted						Sat				Water table at approximately 68 ft bgs
			70		SP									

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number AMW-03 Use only as an attachment to Form 4400-122. Page 5 of 5

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			73	Sand, tan, very coarse to fine, poorly sorted, trace gravel, compacted *(continued)*	SP									
			74											
			75											
			76	End of boring at 76 feet bgs										Well set at approximately 75.5 ft bgs with a 10 foot screen

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Chippewa Valley Regional Airport (CVRA)		AMW-04

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Adam Horizon Construction and Exploration	5/11/2022	5/11/2022	hollow stem auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			70.00 Feet MSL	884.0 Feet MSL	8.25

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
SW 1/4 of NW 1/4 of Section 33, T 28 N, R 9 W

Lat 44 ° 51 32.21402 "
Long 91 ° 29 '4.70253 "

Local Grid Location
☐ N ☐ E
Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Chippewa	9	Eau Claire

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	Blind drilled to approximately 65 feet Sand, brown to tan, very coarse to fine, loose, dry, trace gravel	SP					Dry				
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			10											
			11											
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
Marcus Hopkins	AECOM	Fax:

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number AMW-04 Use only as an attachment to Form 4400-122.

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			13	Blind drilled to approximately 65 feet Sand, brown to tan, very coarse to fine, loose, dry, trace gravel *(continued)*	SP					Dry				
			14											
			15											
			16											
			17											
			18											
			19											
			20											
			21											
			22											
			23											
			24											
			25											
			26											
			27											
			28											
			29											
			30											
			31											
			32											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number AMW-04 Use only as an attachment to Form 4400-122.

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			33	Blind drilled to approximately 65 feet Sand, brown to tan, very coarse to fine, loose, dry, trace gravel *(continued)*	SP					Dry				
			34											
			35											
			36											
			37											
			38											
			39											
			40											
			41											
			42											
			43											
			44											
			45											
			46											
			47											
			48											
			49											
			50											
			51											
			52											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number AMW-04 Use only as an attachment to Form 4400-122. Page 4 of 5

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			53	Blind drilled to approximately 65 feet Sand, brown to tan, very coarse to fine, loose, dry, trace gravel *(continued)*						Dry				
			54											
			55											
			56											
			57											
			58											
			59		SP									
			60											
			61											
			62											
			63											
			64											
			65	Sand, light tan to brown, coarse to fine, poorly sorted, compacted, dry, trace gravel						Dry				
			66											
			67											
			68		SP									
			69											
			70	Sand, light tan to tan, coarse to fine, poorly sorted, compacted, saturated, trace gravel						Sat				Soil sampled collected at 69-70'
			71		SP									
			72											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number AMW-04 Use only as an attachment to Form 4400-122.

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			73	Sand, light tan to tan, coarse to fine, poorly sorted, compacted, saturated, trace gravel *(continued)*	SP					Sat				Well with a 10 ft screen set at approximately 73.5 ft bgs
			74											
			75							Sat				
			76	End of boring at 76 feet bgs										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Chippewa Valley Regional Airport (CVRA)		AMW-05

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Adam Horizon Construction and Exploration	5/12/2022	5/12/2022	hollow stem auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			65.50 Feet MSL	883.9 Feet MSL	8.25

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
SW 1/4 of NW 1/4 of Section 33, T 28 N, R 9 W

Lat 44 ° 51 32.15649 "
Long 91 ° 28 '51.8027 "

Local Grid Location
☐ N ☐ E
Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Chippewa	9	Eau Claire

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	Blind drilled to approximately 65 feet Sand with gravel, interbedded coarse, fine, gravelly, dry	SP					Dry				
			1											
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			10											
			11											
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
Marcus Hopkins	AECOM	Fax:

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number AMW-05 Use only as an attachment to Form 4400-122.

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			13	Blind drilled to approximately 65 feet Sand with gravel, interbedded coarse, fine, gravelly, dry *(continued)*	SP					Dry				
			14											
			15											
			16											
			17											
			18											
			19											
			20											
			21											
			22											
			23											
			24											
			25											
			26											
			27											
			28											
			29											
			30											
			31											
			32											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number AMW-05 Use only as an attachment to Form 4400-122.

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				Blind drilled to approximately 65 feet										
			33	Sand with gravel, interbedded coarse, fine, gravelly, dry *(continued)*						Dry				
			34											
			35											
			36											
			37											
			38											
			39											
			40											
			41											
			42		SP									
			43											
			44											
			45											
			46											
			47											
			48											
			49											
			50											
			51											
			52											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number AMW-05 Use only as an attachment to Form 4400-122. Page 4 of 5

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			53	Blind drilled to approximately 65 feet Sand with gravel, interbedded coarse, fine, gravelly, dry *(continued)*						Dry				
			54											
			55											
			56											
			57											
			58											
			59		SP									
			60							Dry				
			61											
			62											
			63											
			64											
			65	Sand, light tan, poorly sorted, loose to medium compacted, saturated, trace gravel						Sat				Water table at approximately 65.5 ft bgs Soil sampled collected at 65-67'
			66											
			67											
			68											
			69		SP									
			70											
			71											
			72							Sat				

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number AMW-05 Use only as an attachment to Form 4400-122. Page 5 of 5

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			73	Sand, light tan, poorly sorted, loose to medium compacted, saturated, trace gravel *(continued)*	SP					Sat				Well with 10 ft screen set at approximately 72 ft bgs
			74											
			75	End of boring at 75 feet bgs										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Chippewa Valley Regional Airport (CVRA)		ASB-01

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Marcus Hopkins AECOM	5/12/2022	5/12/2022	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet MSL	4.00

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
SW 1/4 of NW 1/4 of Section 33, T 28 N, R 9 W

Lat 44 ° 51 ' 46.73 "
Long 91 ° 29 ' 17.561 "

Local Grid Location
☐ N ☐ E
Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Chippewa	9	Eau Claire

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	Topsoil	Topsoil									
			1	Sand, brown, very coarse to fine, very poorly sorted, trace gravel, dry, loose	SP									Soil sampled collected at 1-2'
			2	End of boring at 2 feet bgs										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature *Marcus Hopkins* Firm AECOM Tel: Fax:

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State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing

Form 3300-005 (R 4/08)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ **Verification Only of Fill and Seal**

Route to: ☐ Drinking Water ☐ Waste Management ☐ Watershed/Wastewater ☐ Other: ☒ Remediation/Redevelopment

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Chippewa		AMW-02

Lattitude / Longitude (Degrees and Minutes) — Method Code (see instructions)

__ __ ° __ __ . __ __ __ ' N
__ __ ° __ __ . __ __ __ ' W

¼ / ¼ SW	¼ NW	Section	Township	Range
or Gov't Lot #		33	28 N	9 ☐ E ☒ W

Well Street Address: 3800 Starr Ave

Well City, Village or Town	Well ZIP Code
Eau Claire	54703

Subdivision Name	Lot #

Reason For Removal From Service	WI Unique Well # of Replacement Well
unable to properly set well	

2. Facility / Owner Information

Facility Name: Chippewa Valley Regional Airport

Facility ID (FID or PWS):

License/Permit/Monitoring #:

Original Well Owner: Chippewa Valley Regional Airport

Present Well Owner: Chippewa Valley Regional Airport

Mailing Address of Present Owner: 3800 Starr Ave

City of Present Owner	State	ZIP Code
Eau Claire	WI	54703

3. Well / Drillhole / Borehole Information

☐ Monitoring Well ☐ Water Well ☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 05/10/2022

If a Well Construction Report is available, please attach.

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug ☐ Other (specify): _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
90	N/A
Lower Drillhole Diameter (in.)	**Casing Depth (ft.)**
N/A	N/A

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☒ Yes	☐ No	☐ N/A
If yes, was hole retopped?	☒ Yes	☐ No	☐ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☒ Yes	☐ No	☐ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped ☐ Screened & Poured (Bentonite Chips) ☒ Other (Explain): gravity

Sealing Materials
☐ Neat Cement Grout ☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Sand-Cement (Concrete) Grout ☐ Bentonite-Sand Slurry " "
☐ Concrete ☒ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☒ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used To Fill Well / Drillhole

From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Puregold Medium Chips	Surface	80	approx 35 cubic feet

6. Comments

Borehole collapsed at approx 80 ft bgs. Borehole has widened near surface and required large volume of chips to fill

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing (mm/dd/yyyy)
Horizon Construction and Exploration		05/10/2022

Street or Route	Telephone Number
764 Tower Dr.	(262) 692-3347

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Fredonia	WI	53021		

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing

Form 3300-005 (R 4/08)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ **Verification Only of Fill and Seal**

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☒ Remediation/Redevelopment ☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Chippewa	_ _ _ _ _ _	ABS-01

Lattitude / Longitude (Degrees and Minutes) — Method Code (see instructions)

__ __ ° __ __ . __ __ __ ' N
__ __ ° __ __ . __ __ __ ' W

¼ / ¼ NW	¼ SW	Section	Township	Range
or Gov't Lot #		33	28 N	9 ☐ E ☒ W

Well Street Address: 3800 Starr Ave

Well City, Village or Town	Well ZIP Code
Eau Claire	54703

Subdivision Name	Lot #

Reason For Removal From Service	WI Unique Well # of Replacement Well
unable to properly set well	_ _ _ _ _ _

2. Facility / Owner Information

Facility Name: Chippewa Valley Regional Airport

Facility ID (FID or PWS):

License/Permit/Monitoring #:

Original Well Owner: Chippewa Valley Regional Airport

Present Well Owner: Chippewa Valley Regional Airport

Mailing Address of Present Owner: 3800 Starr Ave

City of Present Owner	State	ZIP Code
Eau Claire	WI	54703

3. Well / Drillhole / Borehole Information

☐ Monitoring Well ☐ Water Well ☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 05/12/2022

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug ☒ Other (specify): hand auger

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
2	N/A
Lower Drillhole Diameter (in.)	**Casing Depth (ft.)**
N/A	N/A

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped ☐ Screened & Poured (Bentonite Chips) ☒ Other (Explain): gravity

Sealing Materials
☐ Neat Cement Grout ☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Sand-Cement (Concrete) Grout ☐ Bentonite-Sand Slurry " "
☐ Concrete ☒ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☐ Bentonite - Cement Grout ☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used To Fill Well / Drillhole

From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Soil cuttings from boring	Surface	2	N/A	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing (mm/dd/yyyy)
AECOM		05/12/2022

Street or Route	Telephone Number
200 Indiana Ave.	( )

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Stevens Point	WI	54481		

DNR Use Only

Date Received	Noted By

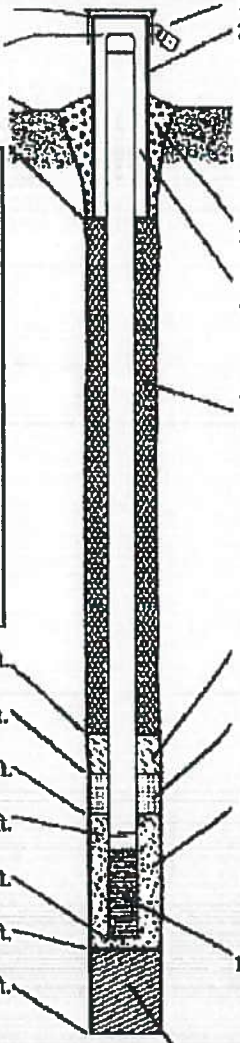
Comments

Appendix C Well Construction & Well Development Forms

MONITORING WELL CONSTRUCTION

Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name: CURA	Local Grid Location of Well: _____ ft. ☐N. ☐S. _____ ft. ☐E. ☐W.	Well Name: AMW-01
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or	Unique Well No. / Well ID No.
Facility ID	St. Plane _____ ft. N, _____ ft. E. S/C/N	Date Well Installed: 05/10/2023 (m m d d y y y y)
Type of Well: Well Code ____/____	Section Location of Waste/Source: ____1/4 of ____ 1/4 of Sec. ____ T. ____ N. R. ____ ☐E ☐W	Well Installed By: Name (first, last) and Firm: Adam / Horizon Exploration
Distance from Waste/Source _____ ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known / Gov. Lot Number	



A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation _____ ft. MSL
C. Land surface elevation _____ ft. MSL
D. Surface seal, bottom _____ ft. MSL or _____ ft.

12. USCS classification of soil near screen:
OP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50 / Hollow Stem Auger ☒ 41 / Other ☐ _____

15. Drilling fluid used: Water ☐ 02 / Air ☐ 01 / Drilling Mud ☐ 03 / None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe _____

17. Source of water (attach analysis, if required):
_____

E. Bentonite seal, top _____ ft. MSL or 2 ft.
F. Fine sand, top _____ ft. MSL or 72.9 ft.
G. Filter pack, top _____ ft. MSL or 73.9 ft.
H. Screen joint, top _____ ft. MSL or 74.9 ft.
I. Well bottom _____ ft. MSL or 84.9 ft.
J. Filter pack, bottom _____ ft. MSL or 90 ft.
K. Borehole, bottom _____ ft. MSL or 90 ft.
L. Borehole, diameter 8.25 in.
M. O.D. well casing 2.25 in.
N. I.D. well casing 2.0 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 3 in.
b. Length: ___ ft.
c. Material: Steel ☒ 04 / Other ☐ _____
d. Additional protection? ☐ Yes ☐ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30 / Concrete ☐ 01 / Other ☒ Sand
4. Material between well casing and protective pipe: Bentonite ☐ 30 / Other ☐ _____
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. _____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. _____ % Bentonite ..... Bentonite-cement grout ☐ 50
e. _____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 / Tremie pumped ☐ 02 / Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☒3/8 in. ☐1/2 in. Bentonite chips ☒ 32
c. _____ Other ☐ _____
7. Fine sand material: Manufacturer, product name & mesh size
a. Red Flint #15 - 0.5 bags (50 lbs)
b. Volume added _____ ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint #40 - 7 bags (50 lbs)
b. Volume added _____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23 / Flush threaded PVC schedule 80 ☐ 24 / Other ☐ _____
10. Screen material: PVC
a. Screen type: Factory cut ☒ 11 / Continuous slot ☐ 01 / Other ☐ _____
b. Manufacturer _____
c. Slot size: 0.10 in.
d. Slotted length: 10 ft.
11. Backfill material (below filter pack): None ☒ 14 / Other ☐ _____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: AECOM

MONITORING WELL CONSTRUCTION

Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name: CURA	Local Grid Location of Well: _____ ft. ☐N. ☐S. _____ ft. ☐E. ☐W.	Well Name: AMW-02
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or	Unique Well No. / Well ID No.
Facility ID	St. Plane _____ ft. N, _____ ft. E. S/C/N	Date Well Installed: 05/11/2022 (m m d d y y y y)
Type of Well: Well Code ____/____	Section Location of Waste/Source: ____1/4 of ____ 1/4 of Sec. ____ T. ____ N, R. ____ ☐E ☐W	Well Installed By: Name (first, last) and Firm: Adam Horizon Exploration
Distance from Waste/Source _____ ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient g ☐ Sidegradient d ☒ Downgradient n ☐ Not Known	Gov. Lot Number

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation _____ ft. MSL
C. Land surface elevation _____ ft. MSL
D. Surface seal, bottom _____ ft. MSL or _____ ft.

12. USCS classification of soil near screen:
GP ☒ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐
13. Sieve analysis performed? ☐ Yes ☒ No
14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
Other ☐ _____
15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99
16. Drilling additives used? ☐ Yes ☒ No
Describe _____
17. Source of water (attach analysis, if required):
_____

E. Bentonite seal, top _____ ft. MSL or 1 ft.
F. Fine sand, top _____ ft. MSL or 19.86 ft.
G. Filter pack, top _____ ft. MSL or 20.86 ft.
H. Screen joint, top _____ ft. MSL or 21.86 ft.
I. Well bottom _____ ft. MSL or 31.86 ft.
J. Filter pack, bottom _____ ft. MSL or 34.0 ft.
K. Borehole, bottom _____ ft. MSL or 34.5 ft.
L. Borehole, diameter 8.25 in.
M. O.D. well casing 2.25 in.
N. I.D. well casing 2.0 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 8 in.
b. Length: ___ ft.
c. Material: Steel ☒ 04 Other ☐ _____
d. Additional protection? ☐ Yes ☐ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30 Concrete ☐ 01 Other ☒ Sand
4. Material between well casing and protective pipe: Bentonite ☐ 30 Other ☐ 24 Bags
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. _____ ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 Tremie pumped ☐ 02 Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☒3/8 in. ☐1/2 in. Bentonite chips ☒ 32
c. _____ Other ☐ _____
7. Fine sand material: Manufacturer, product name & mesh size
a. Red Flint #15 ½ bags (50lbs)
b. Volume added _____ ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint #40 7 bags (50lbs)
b. Volume added _____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 25 Flush threaded PVC schedule 80 ☐ 24 Other ☐ _____
10. Screen material: PVC
a. Screen type: Factory cut ☒ 11 Continuous slot ☐ 01 Other ☐ _____
b. Manufacturer _____
c. Slot size: 0.10 in.
d. Slotted length: 10 ft.
11. Backfill material (below filter pack): None ☒ 14 Other ☐ _____

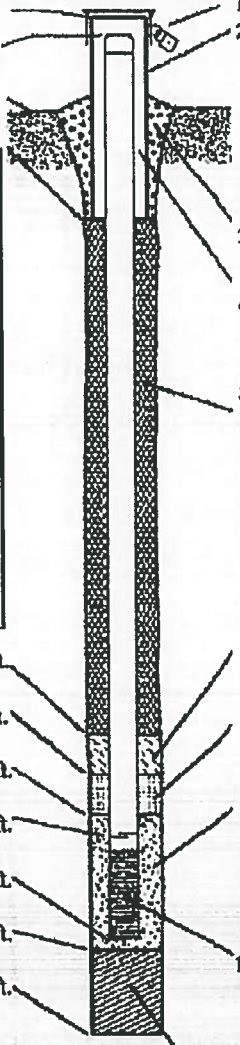
I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: AECOM

MONITORING WELL CONSTRUCTION

Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name: CURA	Local Grid Location of Well: _____ ft. ☐N. ☐S. _____ ft. ☐E. ☐W.	Well Name: AMW-03
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or	Unique Well No. / Well ID No.
Facility ID	St. Plane _____ ft. N, _____ ft. E. S/C/N	Date Well Installed: 05/12/2022 (m m d d y y y y)
Type of Well: Well Code ____/____	Section Location of Waste/Source: ____1/4 of ____ 1/4 of Sec. ____ T. ____ N, R. ____ ☐E ☐W	Well Installed By: Name (first, last) and Firm: Adam / Horizon Exploration
Distance from Waste/Source _____ ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient g ☐ Sidegradient d ☒ Downgradient n ☐ Not Known	Gov. Lot Number



A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation _____ ft. MSL
C. Land surface elevation _____ ft. MSL
D. Surface seal, bottom _____ ft. MSL or _____ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50 / Hollow Stem Auger ☒ 41 / Other ☐ _____

15. Drilling fluid used: Water ☐ 02 / Air ☐ 01 / Drilling Mud ☐ 03 / None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe _____

17. Source of water (attach analysis, if required):
_____

E. Bentonite seal, top _____ ft. MSL or _1_ ft.
F. Fine sand, top _____ ft. MSL or _63.5_ ft.
G. Filter pack, top _____ ft. MSL or _64.5_ ft.
H. Screen joint, top _____ ft. MSL or _65.5_ ft.
I. Well bottom _____ ft. MSL or _75.5_ ft.
J. Filter pack, bottom _____ ft. MSL or _76_ ft.
K. Borehole, bottom _____ ft. MSL or _76_ ft.
L. Borehole, diameter 8.25 in.
M. O.D. well casing 2.25 in.
N. I.D. well casing 2.0 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 8.0 in.
b. Length: ___ ft.
c. Material: Steel ☒ 04 / Other ☐ _____
d. Additional protection? ☐ Yes ☐ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30 / Concrete ☐ 01 / Other ☐ _____
4. Material between well casing and protective pipe: Bentonite ☐ 30 / Other ☐ _____
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. _____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. _____ % Bentonite ..... Bentonite-cement grout ☐ 50
e. _____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 / Tremie pumped ☐ 02 / Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☒3/8 in. ☐1/2 in. Bentonite chips ☒ 32
c. _____ Other ☐ _____
7. Fine sand material: Manufacturer, product name & mesh size
a. Red Flint #15 1 bag (50lbs)
b. Volume added _____ ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint #40 7 bags (50lbs)
b. Volume added _____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23 / Flush threaded PVC schedule 80 ☐ 24 / Other ☐ _____
10. Screen material: PVC
a. Screen type: Factory cut ☒ 11 / Continuous slot ☐ 01 / Other ☐ _____
b. Manufacturer _____
c. Slot size: 0.10 in.
d. Slotted length: 10 ft.
11. Backfill material (below filter pack): None ☒ 14 / Other ☐ _____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: AECOM

MONITORING WELL CONSTRUCTION

Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name	Local Grid Location of Well ☐N. ☐S. _____ ft. ☐E. ☐W. _____ ft.	Well Name AMW-04
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or	Unique Well No. _____ / Well ID No. _____
Facility ID _____	St. Plane _____ ft. N, _____ ft. E. S/C/N	Date Well Installed 05/12/2022 (m m d d y y y y)
Type of Well Well Code _____ / _____	Section Location of Waste/Source _____ 1/4 of _____ 1/4 of Sec. _____ T. _____ N. R. _____ ☐E ☐W	Well Installed By: Name (first, last) and Firm Adam Horizon drilling
Distance from Waste/ Source _____ ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number _____

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation _____ ft. MSL
C. Land surface elevation _____ ft. MSL
D. Surface seal, bottom _____ ft. MSL or _____ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
Other ☐ _____

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe _____

17. Source of water (attach analysis, if required):
_____

E. Bentonite seal, top _____ ft. MSL or 1 ft.
F. Fine sand, top _____ ft. MSL or 60.59 ft.
G. Filter pack, top _____ ft. MSL or 61.59 ft.
H. Screen joint, top _____ ft. MSL or 62.59 ft.
I. Well bottom _____ ft. MSL or 72.59 ft.
J. Filter pack, bottom _____ ft. MSL or 76 ft.
K. Borehole, bottom _____ ft. MSL or 76 ft.
L. Borehole, diameter _____ in.
M. O.D. well casing _____ in.
N. I.D. well casing _____ in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 8 in.
b. Length: _____ ft.
c. Material: Steel ☒ 04
_____ Other ☐ _____
d. Additional protection? ☐ Yes ☐ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30
Concrete ☐ 01
Sand Other ☒ _____
4. Material between well casing and protective pipe:
Bentonite ☐ 30
_____ Other ☐ _____
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. _____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☐ 02
Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☒3/8 in. ☐1/2 in. Bentonite chips ☒ 32
c. _____ Other ☐ _____
7. Fine sand material: Manufacturer, product name & mesh size
a. Red Flint #15 1 bag (50lbs)
b. Volume added _____ ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint #40 6 bags (a/lbs)
b. Volume added _____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23
Flush threaded PVC schedule 80 ☐ 24
_____ Other ☐ _____
10. Screen material: PVC
a. Screen type: Factory cut ☒ 11
Continuous slot ☐ 01
_____ Other ☐ _____
b. Manufacturer _____
c. Slot size: 0.10 in.
d. Slotted length: 10 ft.
11. Backfill material (below filter pack): None ☒ 14
_____ Other ☐ _____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm AECOM

MONITORING WELL CONSTRUCTION

Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name: CURA	Local Grid Location of Well: _____ ft. ☐N. ☐S. _____ ft. ☐E. ☐W.	Well Name: AMW-05
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ___ ° ___ ' ___ " Long. ___ ° ___ ' ___ " or	Unique Well No. _____ / Well ID No. _____
Facility ID _____	St. Plane _____ ft. N, _____ ft. E. S/C/N	Date Well Installed: 05/12/2022 (m m d d y y y y)
Type of Well: Well Code ____/____	Section Location of Waste/Source: ____1/4 of ____ 1/4 of Sec. ____ T. ____ N, R. ____ ☐E ☐W	Well Installed By: Name (first, last) and Firm: Adam Horizon Exploration
Distance from Waste/Source _____ ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known / Gov. Lot Number _____	

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation _____ ft. MSL
C. Land surface elevation _____ ft. MSL
D. Surface seal, bottom _____ ft. MSL or _____ ft.

12. USCS classification of soil near screen:
GP ☒ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50 / Hollow Stem Auger ☒ 41 / Other ☐ _____

15. Drilling fluid used: Water ☐ 02 / Air ☐ 01 / Drilling Mud ☐ 03 / None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe _____

17. Source of water (attach analysis, if required):
_____

E. Bentonite seal, top _____ ft. MSL or __1__ ft.
F. Fine sand, top _____ ft. MSL or 60.0 ft.
G. Filter pack, top _____ ft. MSL or 61.0 ft.
H. Screen joint, top _____ ft. MSL or 62.0 ft.
I. Well bottom _____ ft. MSL or 72 ft.
J. Filter pack, bottom _____ ft. MSL or 76 ft.
K. Borehole, bottom _____ ft. MSL or 75 ft.
L. Borehole, diameter 8.25 in.
M. O.D. well casing 2.25 in.
N. I.D. well casing 2.0 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 8 in.
b. Length: ___ ft.
c. Material: Steel ☒ 04 / Other ☐ _____
d. Additional protection? ☐ Yes ☐ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30 / Concrete ☐ 01 / Other ☐ _____
4. Material between well casing and protective pipe: Bentonite ☐ 30 / Other ☐ _____
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. _____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 / Tremie pumped ☐ 02 / Gravity ☐ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☒3/8 in. ☐1/2 in. Bentonite chips ☒ 32
c. _____ Other ☐ _____
7. Fine sand material: Manufacturer, product name & mesh size
a. Red Flint #15 0.5 bags (50lbs)
b. Volume added _____ ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint #40 5 bags (50lbs)
b. Volume added _____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23 / Flush threaded PVC schedule 80 ☐ 24 / Other ☐ _____
10. Screen material: PVC
a. Screen type: Factory cut ☒ 11 / Continuous slot ☐ 01 / Other ☐ _____
b. Manufacturer _____
c. Slot size: 0.10 in.
d. Slotted length: 10 ft.
11. Backfill material (below filter pack): None ☒ 14 / Other ☐ _____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: AECOM

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
CVRA	Chippewa	AMW-01

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method

surged with bailer and bailed	☐	41
surged with bailer and pumped	☐	61
surged with block and bailed	☐	42
surged with block and pumped	☒	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other _____	☐	

3. Time spent developing well: 240 min.

4. Depth of well (from top of well casisng): 84.9 ft.

5. Inside diameter of well: 2.0 in.

6. Volume of water in filter pack and well casing: ~15.0 gal.

7. Volume of water removed from well: 45.0 gal.

8. Volume of water added (if any): ___ gal.

9. Source of water added: ___

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	79.36 ft.	79.37 ft.
Date b. (m m / d d / y y y y)	05/10/2022	05/10/2022
Time c.	11:15 ☒ a.m. ☐ p.m.	3:15 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	___ inches	___ inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☐ 20 Turbid ☒ 25
(Describe)	Chocolate milk tan brown	milky white light brown

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	___ mg/l	___ mg/l
15. COD	___ mg/l	___ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Chris Last Name: Struebing
Firm: AECOM

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Chris Struebing
Print Name: Chris Struebing
Firm: AECOM

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
CVRA	Chippewa	AMW-02

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method

surged with bailer and bailed	☐	41
surged with bailer and pumped	☐	61
surged with block and bailed	☐	42
surged with block and pumped	☒	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other _____	☐	

3. Time spent developing well 90 min.

4. Depth of well (from top of well casisng) 319 ft.

5. Inside diameter of well 2.0 in.

6. Volume of water in filter pack and well casing ~2.0 gal.

7. Volume of water removed from well ~2.0 gal.

8. Volume of water added (if any) - gal.

9. Source of water added -

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	29.78 ft.	30.92 ft.
Date b.	05/13/2022	05/13/2022
Time c.	09:00 ☒ a.m. ☐ p.m.	10:30 ☒ a.m. ☐ p.m.
12. Sediment in well bottom	- inches	- inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☐ 20 Turbid ☒ 25
(Describe)	Dark Brown	Dark Tan

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	- mg/l	- mg/l
15. COD	- mg/l	- mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Chris Last Name: Struebing
Firm: AECOM

17. Additional comments on development:
depth from bottom 31.86 ft

Name and Address of Facility Contact/Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Chris Struebing
Print Name: Chris Struebing
Firm: AECOM

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
CVRA	Chippewa	AMW-03

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	41
surged with bailer and pumped	☐	61
surged with block and bailed	☐	42
surged with block and pumped	☒	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other _____	☐	

3. Time spent developing well 90 min.

4. Depth of well (from top of well casisng) 75.51 ft.

5. Inside diameter of well 2.0 in.

6. Volume of water in filter pack and well casing ~15.0 gal.

7. Volume of water removed from well ~45.0 gal.

8. Volume of water added (if any) ___ gal.

9. Source of water added ___

10. Analysis performed on water added? (If yes, attach results) ☐ Yes ☒ No

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 66.71 ft.	66.85 ft.
Date	b. 05/13/2022 (m m d d y y y y)	05/13/2022
Time	c. 03:35 ☐ a.m. ☒ p.m.	05:00 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	___ inches	___ inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)	Dark Brown	Clear

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	___ mg/l	___ mg/l
15. COD	___ mg/l	___ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Chris Last Name: Struebing
Firm: AECOM

17. Additional comments on development:
depth to bottom 75.51 ft

Name and Address of Facility Contact/Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Chris Struebing
Print Name: Chris Struebing
Firm: AECOM

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
CVRA	Chippewa	AMW-04

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	41
surged with bailer and pumped	☐	61
surged with block and bailed	☐	42
surged with block and pumped	☒	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other _____	☐	

3. Time spent developing well: 90 min.

4. Depth of well (from top of well casisng): 72.59 ft.

5. Inside diameter of well: 2.0 in.

6. Volume of water in filter pack and well casing: ~15.0 gal.

7. Volume of water removed from well: ~45.0 gal.

8. Volume of water added (if any): ___ gal.

9. Source of water added: _____

10. Analysis performed on water added? (If yes, attach results) ☐ Yes ☒ No

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 68.86 ft.	68.85 ft.
Date	b. 05/12/2022	05/12/2022
Time	c. 10:30 ☒ a.m. ☐ p.m.	12:00 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	___ inches	___ inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)	Dark Brown	Clear

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	___ mg/l	___ mg/l
15. COD	___ mg/l	___ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Chris Last Name: Struebing
Firm: AECOM

17. Additional comments on development:
depth to bottom 72.59 ft

Name and Address of Facility Contact/Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Chris Struebing
Print Name: Chris Struebing
Firm: AECOM

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
CVRA	Chippewa	AMW-05

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	41
surged with bailer and pumped	☐	61
surged with block and bailed	☐	42
surged with block and pumped	☒	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other _____	☐	

3. Time spent developing well 90 min.

4. Depth of well (from top of well casisng) 718 ft.

5. Inside diameter of well 2.0 in.

6. Volume of water in filter pack and well casing ~20.0 gal.

7. Volume of water removed from well ~55.0 gal.

8. Volume of water added (if any) ___ gal.

9. Source of water added ___

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 65.56 ft.	65.78 ft.
Date	b. 05/12/2022	05/12/2022
Time	c. 04:30 ☐ a.m. ☒ p.m.	05:50 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	___ inches	___ inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)	Dark Brown	Clear to light brown

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	___ mg/l	___ mg/l
15. COD	___ mg/l	___ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Chris Last Name: Struebing
Firm: AECOM

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Chris Struebing
Print Name: Chris Struebing
Firm: AECOM

NOTE: See instructions for more information including a list of county codes and well type codes.

Appendix D Groundwater Sampling Forms

AECOM

Well Purging and Sample Collection

Well No.	MW-55A	Site Name/Location	CVRA
		AECOM Job No.	
Water Level (ft TPVC)	81.19	Weather	60-70°F, Slight, Windy,
Well Depth (ft TPVC)	--	Person(s) Sampling	Marcus Hopkins
Purging Method	~~[illegible]~~ Submersible		
Purge Start Time	0840		
Purge Stop Time			
Sampling Method	Submersible		
Sampler Intake Depth (ft)			
Average Sample Flow Rate			
Sample Collection Time	0940		

EC (µS/cm)

Field Measurements and Observations

Time	DO (mg/L)	Temp (deg C)	pH	Cond. (uMhos/cm)	ORP (mV)	Turbidity (NTU)	Color	Odor	Water Level (ft TPVC)	Vol. Purged (gal)
0845	11.08	14.9	11.52	1366	104.9	low	~~[illegible]~~ cl	no	—	—
0850										
0855										
0900										
0905										
0940	11.05	12.10	9.91	149	127.1	low	~~[illegible]~~ cl	no	81.21	
0915	11.13	12.0	11.16	133	90.5	0.9	~~[illegible]~~	no	81.21	
0920	11.10	12.10	7.28	132	151.1	5.8	CLR	no	81.21	
0925	11.07	12.10	7.19	132	151.2	14.0	CLR	no	81.21	
0930	11.08	12.10	7.15	132	157.0	15.2	CLR	no	81.21	
0935	11.08	12.40	7.12	133	156.0	17.3	CLR	no	81.21	~1.5 gal

Stabilization Criteria	
pH:	±0.1
Specific Conductance	±3%
ORP	±10 mV
Turbidity	±10% (when >10 NTU)
DO	±0.3 mg/L

Comments: pH maxed out and ORP with very low values (-546.7mV)
Connector to probe may have been loose, parameters returned to normal ranges after tightening

Well Condition	Repairs Required	Comments
Protective Cover		
Concrete Pad		
Inner Well Casing		
Locking Cap		

Form Completed By: _____ Title _____ Date 6/7/22

AECOM

Well Purging and Sample Collection

Well No. AMW-01

Water Level (ft TPVC) 79.95

Well Depth (ft TPVC) --

Purging Method Submersible

Purge Start Time 1255

Purge Stop Time 1355

Sampling Method Submersible

Sampler Intake Depth (ft)

Average Sample Flow Rate

Sample Collection Time 1355

Site Name/Location CVRA

AECOM Job No.

Weather

Person(s) Sampling Marcus Hopkins

µS/cm

Field Measurements and Observations

Time	DO (mg/L)	Temp (deg C)	pH	Cond (uMhos/cm)	ORP (mV)	Turbidity (NTU)	Color	Odor	Water Level (ft TPVC)	Vol. Purged (gal)
~~1300~~	3.90	13.4	12.04	270	35	737	Brn	no	79.78	
1305	5.01	14.2	7.13	226	102	243	Brn	no	79.58	
1310	6.37	14.1	7.94	9.81	9.81	155	tan	no	79.58	
1315	6.52	14.1	7.74	212	47	145	tan	no	79.79	
1320	6.83	13.9	12.02	200	-75	111	Clear	no	79.75	
~~1325~~	7.05	13.6	--	~~197~~	-170	249	Clear	no	81.7	
1330	7.25	13.50	10.05	192	59	516	Lt Brn	no	80.09	
1335	7.49	13.50	6.98	174	117	209	Lt Brn	no	80.06	
1340	7.67	13.4	7.44	167	115	98.1	Lt Brn	no	80.06	
1345	7.81	13.4	6.84	120	119	107	Lt Brn	no	80.06	
1350	7.22	13.9	6.71	156	119	58.9	Lt Brn	no	80.06	
1355	7.99	13.6	7.71	155	110	97.0	Lt Brn	no	80.06	10.0 gal

cond 2/3

Stabilization Criteria	
pH:	±0.1
Specific Conductance	±3%
ORP	±10 mV
Turbidity	±10% (when >10 NTU)
DO	±0.3 mg/L

Comments

Well Condition	Repairs Required	Comments
Protective Cover		
Concrete Pad		
Inner Well Casing		
Locking Cap		

Form Completed By: _____ Title _____ Date 6/7/22

AECOM

Well Purging and Sample Collection

Well No. AMW-02

Water Level (ft TPVC) 31.41

Well Depth (ft TPVC) --

Purging Method Submersible

Purge Start Time

Purge Stop Time

Sampling Method Submersible

Sampler Intake Depth (ft)

Average Sample Flow Rate

Sample Collection Time 1530

Site Name/Location CVRA

AECOM Job No.

Weather

Person(s) Sampling Marcus Hopkins

Field Measurements and Observations

Time	DO (mg/L)	Temp (deg C)	pH	Cond (uMhos/cm)	ORP (mV)	Turbidity (NTU)	Color	Odor	Water Level (ft TPVC)	Vol. Purged (gal)
	Well purges dry									

Stabilization Criteria	
pH:	± 0.1
Specific Conductance	± 3%
ORP	± 10 mV
Turbidity	± 10% (when >10 NTU)
DO	± 0.3 mg/L

Comments Not enough volume to fill low flow cell. Collected grab sample without stabilizing

Well Condition	Repairs Required	Comments
Protective Cover		
Concrete Pad		
Inner Well Casing		
Locking Cap		

Form Completed By: _____ Title _____ Date 6/7/22

AECOM

Well Purging and Sample Collection

Well No. AMW-03

Water Level (ft TPVC) 66.72

Well Depth (ft TPVC) ~~66.72~~

Purging Method Submersible

Purge Start Time 1035

Purge Stop Time 1110

Sampling Method Submersible

Sampler Intake Depth (ft)

Average Sample Flow Rate

Sample Collection Time 1110

Site Name/Location CVRA

AECOM Job No.

Weather

Person(s) Sampling Marcus Hopkins

µs/cm

Field Measurements and Observations

Time	DO (mg/L)	Temp (deg C)	pH	Cond (uMhos/cm)	ORP (mV)	Turbidity (NTU)	Color	Odor	Water Level (ft TPVC)	Vol. Purged (gal)
1040	9.88	11.80	6.53	89	239	2139	Brn	no	67.11	
1045	9.60	12.50	6.93	91	249	1427	Brn	no	67.16	
1050	9.41	12.53	6.40	95	234	916	Brn	no	67.10	
1055	9.34	12.78	6.19	94	225	796	Brn	no	67.11	
1100	9.24	12.90	6.70	97	240	567	Brn	no	67.09	
1105	9.16	12.8	7.45	99	240	514	Brn	no	67.61	8.0gal
1110	Sampled									

Stabilization Criteria	
pH:	± 0.1
Specific Conductance	± 3%
ORP	± 10 mV
Turbidity	± 10% (when >10 NTU)
DO	± 0.3 mg/L

Comments

Well Condition	Repairs Required	Comments
Protective Cover		
Concrete Pad		
Inner Well Casing		
Locking Cap		

Form Completed By: _____ Title _____ Date 6/8/22

AECOM

Well Purging and Sample Collection

Well No. AMW-04

Water Level (ft TPVC) 68.84

Well Depth (ft TPVC) --

Purging Method Submersible

Purge Start Time 0855

Purge Stop Time 0935

Sampling Method Submersible

Sampler Intake Depth (ft)

Average Sample Flow Rate

Sample Collection Time 0925

Site Name/Location CVRA

AECOM Job No.

Weather

Person(s) Sampling Marcus Hopkins

µS/cm

Field Measurements and Observations

Time	DO (mg/L)	Temp (deg C)	pH	Cond (uMhos/cm)	ORP (mV)	Turbidity (NTU)	Color	Odor	Water Level (ft TPVC)	Vol. Purged (gal)
0900	7.71	12.7	11.57	278	138	57.7	CLR	ND	68.90	
0905	7.75	12.9	10.67	279	162	30.2	CLR	ND	68.90	
0910	7.83	12.85	9.92	274	198	21.8	CLR	ND	68.91	
0915	7.81	12.80	10.60	280	173	21.3	CLR	ND	68.91	
0920	7.83	12.80	8.77	277	2177	17.1	CLR	ND	68.91	
0925	7.83	12.86	9.26	277	208	19.9	CLR	ND	68.91	
0930	7.81	12.8	9.03	277	215	18.5	CLR	ND	68.91	9.5 gal
0935	Sample									

Stabilization Criteria	
pH:	± 0.1
Specific Conductance	± 3%
ORP	± 10 mV
Turbidity	± 10% (when >10 NTU)
DO	± 0.3 mg/L

Comments

Well Condition — Repairs Required — Comments

Protective Cover

Concrete Pad

Inner Well Casing

Locking Cap

Form Completed By: _____ Title _____ Date 6/8/22

AECOM

Well Purging and Sample Collection

Well No. AMW-05

Water Level (ft TPVC) 65.72

Well Depth (ft TPVC) --

Purging Method Submersible

Purge Start Time 1655

Purge Stop Time 1730

Sampling Method Submersible

Sampler Intake Depth (ft)

Average Sample Flow Rate

Sample Collection Time 1730

Site Name/Location CVRA

AECOM Job No.

Weather

Person(s) Sampling Marcus Hopkins

µS/cm

Field Measurements and Observations

Time	DO (mg/L)	Temp (deg C)	pH	Cond (uMhos/cm)	ORP (mV)	Turbidity (NTU)	Color	Odor	Water Level (ft TPVC)	Vol. Purged (gal)
1700	9.46	12.0	9.40	344	135	30.1	CLR	NO	65.79	
1705	6.62	12.5	8.85	310	145.7	32	CLR	NO	65.80	
1710	9.59	12.8	7.24	270	162.0	32.7	CLR	NO	65.80	
1715	9.67	12.6	7.93	247	162.5	20.9	CLR	NO	65.81	
1720	9.7	12.6	9.83	244	144.3	20.9	CLR	NO	65.80	
1725	9.62	12.3	13.8	250	166	22.8	CLR	NO	66.80	
1730	9.66	12.3	NA	248	152	21.3	CLR	NO	65.80	9-gal

Stabilization Criteria	
pH:	± 0.1
Specific Conductance	± 3%
ORP	± 10 mV
Turbidity	± 10% (when >10 NTU)
DO	± 0.3 mg/L

Comments

Well Condition	Repairs Required	Comments
Protective Cover		
Concrete Pad		
Inner Well Casing		
Locking Cap		

Form Completed By: _____ Title _____ Date _____

AECOM

Well Purging and Sample Collection

Well No. MW-51A

Water Level (ft TPVC) 68.666

Well Depth (ft TPVC) --

Purging Method ~~Bailer~~ Submersible

Purge Start Time 1030

Purge Stop Time

Sampling Method Submersible

Sampler Intake Depth (ft)

Average Sample Flow Rate

Sample Collection Time 1110

Site Name/Location CVRA

AECOM Job No.

Weather

Person(s) Sampling Marcus Hopkins

µS/cm

Field Measurements and Observations

Time	DO (mg/L)	Temp (deg C)	pH	Cond (uMhos/cm)	ORP (mV)	Turbidity (NTU)	Color	Odor	Water Level (ft TPVC)	Vol. Purged (gal)
1035	7.32	13.9	8.44	410	95.4	65.6	Lt BK	no	68.667	
1040	8.14	14.0	8.46	398	110	11.1	CLR	no	68.666	
1045	8.43	13.9	8.14	397	127.4	12.8	CLR	no	68.669	
1050	8.53	14.10	7.73	395	140	14.5	CLR	no	68.667	
1055	8.70	13.6	8.89	395	129	19.9	CLR	no	68.668	
1100	8.71	13.2	6.78	392	164	73.3	CLR	no	68.668	
1105	8.78	13.3	6.76	392	168	82.9	CLR	no	68.668	
1110	8.77	13.6	~~6.74~~ 6.74	393	173	102	CLR	no	68.668	

Stabilization Criteria	
pH:	±0.1
Specific Conductance	±3%
ORP	±10 mV
Turbidity	±10% (when >10 NTU)
DO	±0.3 mg/L

Comments pH is bouncing all over again. possibly the sensor?

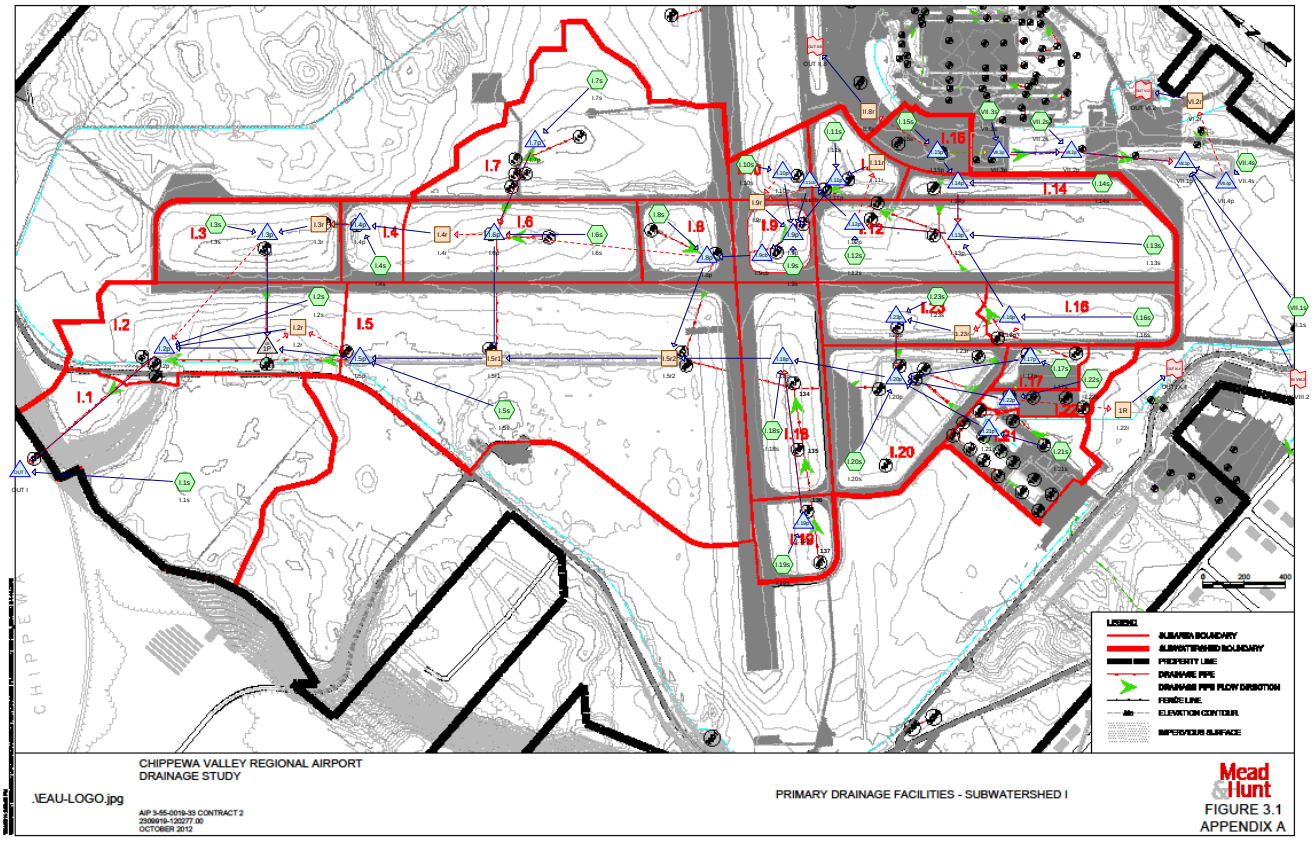
Duplicated as Dup 1

Turbidity value does not reflect actual water, water is very clear

Well Condition	Repairs Required	Comments
Protective Cover		
Concrete Pad		
Inner Well Casing		
Locking Cap		

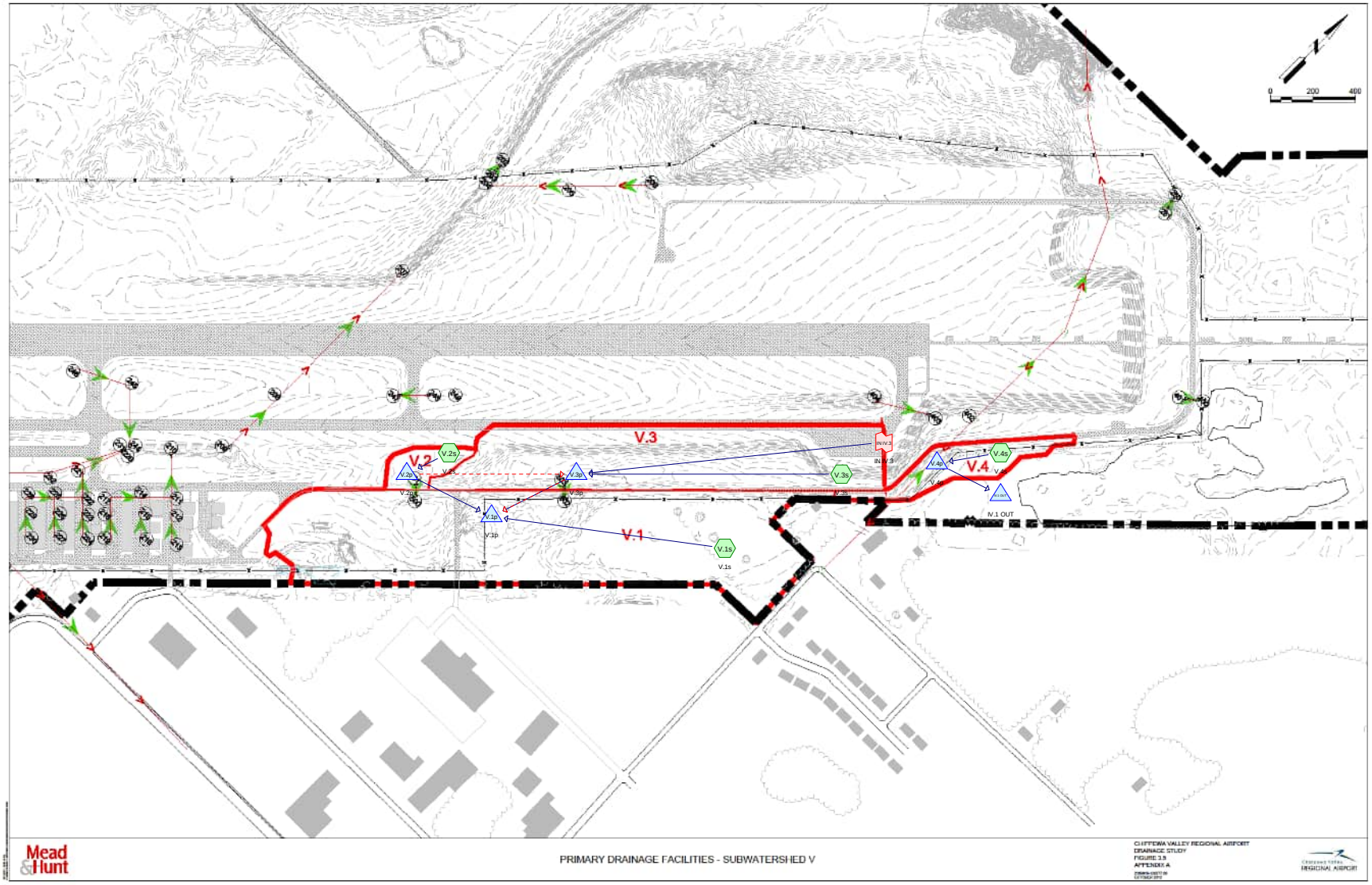
Form Completed By: Marcus Hopkins Title Date 6/7/22

Appendix E Storm Water Drainage, Bed Rock Valley, and Groundwater Flow Mapping



Subcat Reach Pond Link

Routing Diagram for I AND VII_2014_update
Prepared by Mead & Hunt, Inc, Printed 8/5/2014
HydroCAD® 10.00 s/n 00568 © 2011 HydroCAD Software Solutions LLC



Subcat Reach Pond Link

Routing Diagram for V

Prepared by Mead & Hunt, Inc, Printed 10/31/2012

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BURIED BEDROCK VALLEY

PROPOSED WELLHEAD PROTECTION AREA (WHPA)

City of Eau Claire, WI

Legend

FIGURE 2
WELLHEAD PROTECTION AREA (WHPA)

No.	REVISIONS	DATE	BY
0	PRELIMINARY DRAFT.	11/06/20	CJP
1	FIRST DRAFT.	02/09/21	CJP

AREA SITE PLAN WITH WELL AND 1993 PLUME LOCATIONS

NATIONAL PRESTO INDUSTRIES, INC. AND EAU CLAIRE MUNICIPAL WELL FIELD

EAU CLAIRE, WISCONSIN

Gannett Fleming

HARRISBURG, PENNSYLVANIA MADISON, WISCONSIN

LEGEND

- 815 — Groundwater Contour (Dashed Where Inferred)
- Flow Direction
- (816.33) Groundwater Elevation At Well (Feet Above Mean Sea Level)
- MW-10A/B Nested Well Identification (Blue Underlined Well Source Of GWE Measurement)
- 1993 TCE Plume (Approximate)
- Eau Claire Production Well (Active Wells)
- Eau Claire Monitoring Well (Monitored by City, EC Prefix)
- WDNR Monitoring Well Nest (WW Prefix)
- WDNR Monitoring Well (WW Prefix)
- USEPA Monitoring Well (RW Prefix)
- USEPA Monitoring Well Nest (RW Prefix)
- NPI Superfund Monitoring Well Nest (MW Prefix)
- NPI Superfund Monitoring Well (MW Prefix)
- NPI LUST Monitoring Well (PW Prefix)
- NPI Superfund Extraction Well (EW Prefix)

NOTES

1. Groundwater Elevations Measured In Wells While EW-6 Was Pumping, And The Data From EW-1R, EW-2, MW-4A and RW-15 Were Not Used To Develop The Contour Map.
2. Contours Above 830 Are Shown At 5-Foot Intervals And Contours Below 830 Are Shown At 1-Foot Intervals, Except As Shown Around EW-6.
3. Each Sampled Well Is In Red Font (e.g., MW-65A/B/C Indicates The MW-65B/C Are Sampled, But MW-65A Is Not.)
4. Shaded Wells Have Been Abandoned.
5. City Well CW-24 At The ECMWF Started Full Time Operation On 12/05/20.

0 350' 700' 1400'

PROJECT

2020 ANNUAL REPORT
NATIONAL PRESTO INDUSTRIES, INC.
EAU CLAIRE, WISCONSIN

TITLE

WATER TABLE GROUNDWATER CONTOUR MAP (JUNE 2020) WITH 1993 PLUME LOCATIONS

Gannett Fleming

HARRISBURG, PENNSYLVANIA MADISON, WISCONSIN

DRAWN BY: CJP	SCALE: 1" = 700'
DESIGNED BY: CJP	PROJECT No.: 34283.000
APPROVED BY: CCW	DRAWING NO.: FIGURE 1
DATE: FEBRUARY 2021	

020921
ccw_R34283-000_2021_01AR_F01

Appendix F Hydraulic Gradient Calculation

AECOM

CALCULATION SHEET

Client Chippewa Valley Regional Airport
Project Chippewa Valley Regional Airport
Subject Horizontal Hydraulic Gradient

Project No. 60669304
Prepared By BG **Date** 12/21/2022
Reviewed By dsh **Date** 12/21/2022

Objective

Calculate the horizontal hydraulic gradient of the water table aquifer at the Chippawa Valley Regional Airport in Eau Claire, WI.

Assumptions

1. Water elevations were measured on June 7th 2022.
2. The horizontal hydraulic gradient is estimated from Figure 4.

Calculations

Horizontal Hydraulic Gradient

$$I_h = \Delta h_h / \Delta l_h$$

Where:

I_h = Horizontal hydraulic gradient

Δh_h = Difference in water elevation along the flow line depicted on Figure 4.

Δl_h = Length (distance) between the MW elevation and/or contours.

Distance Along Flow line (feet)	Difference in Elevation (ft. MSL)	Horizontal Gradient (feet/foot)
1,700 AMW-03 to AMW-01	821.46 – 810.93 = 10.53	0.0062
3,200 AMW-05 to MW-55A	818.22 – 800.36 = 17.86	0.0056

The average horizontal hydraulic gradient is 0.0059

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