



Naval Facilities Engineering Systems Command Northwest
Silverdale, Washington

Final

Technical Memorandum

**Results of Investigation of Per- and Polyfluoroalkyl Substances in
Off-Base Drinking Water—Ault Field, Area 6, and
Outlying Landing Field Coupeville**

Naval Air Station Whidbey Island
Washington

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Prepared for NAVFAC Northwest
by CH2M HILL, Inc.
Virginia Beach, Virginia
Contract N62470-16-D-9000
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Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water—Ault Field, Area 6, and Outlying Landing Field Coupeville, Naval Air Station Whidbey Island, Washington

PREPARED FOR: Naval Facilities Engineering Systems Command (NAVFAC) Atlantic
NAVFAC Northwest
Naval Air Station (NAS) Whidbey Island

PREPARED BY: CH2M HILL, Inc. (CH2M)

DATE: December 2020

Introduction

CH2M HILL, Inc. (CH2M) was contracted by Naval Facilities Engineering Systems Command (NAVFAC), to evaluate impacts of potential releases of per- and polyfluoroalkyl substances (PFAS) to groundwater at Naval Air Station (NAS) Whidbey Island and collect drinking water samples for PFAS analysis from private drinking water sources near Ault Field and Area 6 located in Oak Harbor, Washington and Outlying Landing Field (OLF) Coupeville located in Coupeville, Washington (**Figure 1**). This technical memorandum (TM) presents the results of the drinking water investigation, which was performed in October 2019 through September 2020 in accordance with the *Sampling and Analysis Plan, Investigation of Per- and Polyfluorinated Substances in Off-Base Drinking Water, Ault Field, Area 6, and Outlying Landing Field Coupeville* (SAP) (CH2M, 2020a). CH2M prepared this TM for the Department of the Navy (Navy) under the NAVFAC Comprehensive Long-term Environmental Action (CLEAN)—Navy 9000 Contract N62470-16-D-9000, Contract Task Order 4470.

Per- and Polyfluoroalkyl Substances

PFAS are manufactured chemicals that have been used since the 1950s in many household and industrial products because of their stain- and water-repellant properties. Within the Navy's operations, PFAS are most commonly associated with aqueous film-forming foam (AFFF) used primarily for firefighting (including emergency response, equipment testing and/or training, and fire suppression systems in buildings). PFAS can also be found in vapor suppression systems and in waste streams. PFAS are now present virtually everywhere in the world because of the large amounts that have been manufactured and used. Once these compounds are released to the environment, they break down very slowly. PFAS are considered "chemicals of emerging concern" which have no Safe Drinking Water Act (SDWA) regulatory standards or routine water quality testing requirements. The United States Environmental Protection Agency (USEPA) is studying PFAS to determine if national regulation is needed. The State of Washington does not have an established state standard or promulgated screening value for any PFAS constituent in either groundwater or drinking water.

USEPA issued the third Unregulated Contaminant Monitoring Rule (UCMR 3)¹ in May 2012. The UCMR 3 required monitoring, between 2013 and 2015, for 30 substances, of all large public water systems (PWSs) serving more than 10,000 people and 800 representative PWSs serving 10,000 or fewer people. Six PFAS compounds were

¹ The 1996 SDWA amendments require that once every 5 years USEPA issue a new list of no more than 30 unregulated contaminants to be monitored by PWSs.

included in the UCMR 3 contaminant list; of these six PFAS, the USEPA has issued health advisories² for only two, perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), and has published toxicity values for another, perfluorobutane sulfonate (PFBS). Health advisories are not regulatory standards. They are health-based concentrations that should offer a margin of protection for all Americans throughout their lives from adverse health effects resulting from exposure to PFOS and PFOA in drinking water. The USEPA health advisories for lifetime exposure are 70 nanograms per liter (ng/L) for PFOS, 70 ng/L for PFOA. When both PFOS and PFOA are found in drinking water, the combined concentrations should not exceed 70 ng/L (USEPA, 2016a, 2016b).

Navy Policy

The Navy issued a policy in 2014 (Navy, 2014) requiring on-Base drinking water sampling for PFOA and PFOS for bases where groundwater was used as drinking water and PFAS could have been released nearby. Under the policy, all installations not previously tested under UCMR 3 that produce drinking water from on-Base sources and have an identified or suspected PFAS release within approximately 1-mile upgradient of the drinking water source, were required to sample their finished drinking water by December 2015. In June 2016, the Navy issued additional policy (Navy, 2016b) that required all Navy bases not previously tested under UCMR 3 or the 2014 policy (Navy, 2014) to test their finished drinking water, regardless of the water source (on-Base or municipal) or potential/known source of a PFAS release to the environment. Ault Field's water is supplied by the City of Oak Harbor, and Oak Harbor's water is supplied by the City of Anacortes. The drinking water provided by the City of Anacortes, the City of Oak Harbor, and Ault Field was sampled under UCMR 3, and PFAS were not detected. Two on-Base drinking water wells at OLF Coupeville were sampled for PFAS in October 2016 (ALS Environmental, 2016). No PFAS were detected in the on-Base drinking water well located in the northern portion of the site near Building 11. PFAS were detected in the on-Base drinking water well in the southwestern portion of the OLF near Building 2807 (ALS Environmental, 2016).

In June 2016, the Navy also issued a policy (Navy, 2016c) to identify and prioritize sites for investigation of drinking water resources, on- or off-Base, that are thought to be vulnerable to PFAS contamination from past Navy releases of PFAS, with a focus on release of AFFF. Sites with drinking water sources (water supply wells, surface water bodies used for drinking water, and reservoirs) within 1 mile downgradient of known or potential releases of PFAS were assigned the highest priority. Drinking water near these high-priority, Priority 1 sites was required to be sampled within fiscal year 2017.

Priority 1 sites at NAS Whidbey Island in Island County, Washington, included the Ault Field Runway Ditches/Former Runway Fire Training School (Areas 16/31), Ault Field Current Fire Training Area, and Outlying Landing Field (OLF) Coupeville. Although not identified as a Priority 1 site for PFAS investigation, the Area 6 Former Landfill was added to off-Base drinking water investigation due to its history as a municipal and industrial waste disposal facility consistent with possible releases of PFAS. The Navy has sampled more than 280 drinking water wells downgradient from Ault Field, Area 6, and OLF Coupeville since November 2016. From November 2016 to October 2017, initial investigative drinking water sampling for PFAS was conducted for drinking water wells downgradient of identified priority 1 sites at Ault Field and OLF Coupeville (CH2M, 2017a). Following the initial drinking water sampling investigation, a routine, semi-annual drinking water sampling program was conducted from October 2017 to April 2019 for drinking water wells with exceedances of the USEPA health advisories and surrounding parcels near Ault Field and OLF Coupeville under the *Sampling and Analysis Plan Investigation of Per- and Polyfluoroalkyl Substances in Drinking Water Ault Field and Outlying Landing Field Coupeville* (CH2M, 2017b, 2018b). The sampling program described in the present report is a continuation of the semi-annual sampling program, with the addition of off-Base locations near Area 6 (CH2M, 2020a).

² USEPA issued lifetime health advisories for PFOS and PFOA in May 2016, superseding the 2009 provisional health advisories. USEPA has not issued health advisories for any other PFAS.

Conceptual Site Model

This section presents a brief history of NAS Whidbey Island, background information about potential PFAS source areas at Ault Field, Area 6, and OLF Coupeville, a description of the environmental setting, and an evaluation of drinking water sources in the vicinity. This information comprises the conceptual site model, which describes the relationship between potential contaminant sources and receptors through potential or actual migration and exposure pathways.

Naval Air Station Whidbey Island Background

NAS Whidbey Island is comprised of three separate installations, Ault Field (includes Area 6), OLF Coupeville, and Seaplane Base (**Figure 1**). NAS Whidbey Island was commissioned on September 21, 1942, and currently supports several types of aircraft, 7,600 military personnel, and 1,300 civilian personnel. The mission of NAS Whidbey Island is to maintain and operate naval aircraft and aviation facilities and provide associated support. The land surrounding Ault Field, Area 6, and OLF Coupeville is used for various agricultural, recreational, residential, and industrial purposes (CH2M, 2020a).

Ault Field

Ault Field is located approximately 50 miles north of Seattle, WA on Whidbey Island directly north of Oak Harbor, WA (**Figure 1**). Ault Field supports Navy tactical electronic attack squadrons flying the EA-18G Growler, the P-3 Orion Maritime Patrol squadrons, and two Fleet Reconnaissance squadrons flying the EP-3E Aries.

In 2015, three areas where AFFF may have been stored, handled, or released at Ault Field (Hangar 5, the Runway Drainage Ditch System [Area 16] and Former Runway Fire School [Area 31]) were investigated within the shallow portion of the aquifer (**Figure 2**) (Navy, 2016a). Sample results indicated the presence of PFAS in groundwater near Hangar 5 and Area 31 (Navy, 2016a).

A preliminary assessment (PA) was conducted in 2018 at Ault Field and identified 35 potential PFAS source areas, including Hangar 5, Area 16, and Area 31. Additionally, the PA identified Area 6 Landfill as a potential PFAS source area; however, PFAS at Area 6 is being investigated independent of Ault Field and is treated as a separate area for the drinking water investigation.

In 2019, Phase 1 of a site inspection (SI) was conducted and confirmed the presence of PFAS in groundwater near four of the 35 potential PFAS source areas:

- 1959-1969 Landfill (Area 2)
- 1968-1970 Landfill (Area 3)
- Current Firefighting School
- Former Clover Valley Fire School (Area 29)

The Phase 1 SI was also conducted in areas between confirmed PFAS release areas and the two off-Base residential parcels near Ault Field where PFAS have been detected in drinking water above the USEPA health advisories. Phase 2 of the SI is ongoing and involves further investigation of PFAS source areas identified in the PA.

Area 6

Area 6 is a 260-acre tract in the southeastern corner of Ault Field (**Figure 1**). Area 6 is bordered by Ault Field Road to the north, State Highway 20 to the east, and the Oak Harbor landfill on the south and southwest. Privately-owned forested or logged land, and a former commercial sand and gravel quarry operation, are located immediately west of Area 6. Currently, Area 6 is mostly vacant and composed of a compost facility, an approximate 40-acre engineered landfill cap, and a stormwater detention basin. It also includes various groundwater monitoring and extraction wells and a groundwater treatment plant (URS, 2015). The off-Base land surrounding Area 6 is used for a combination of residential and commercial purposes.

From 2017 to 2019 an SI and off-Base drinking water sampling investigation was conducted at Area 6 for PFAS. PFAS was detected in 17 groundwater monitoring wells located on-Base at Area 6. Of the 17 groundwater monitoring wells with PFAS detections, one exceeded the USEPA health advisory for PFOA. The drinking water investigation is summarized in the Previous Off-Base Drinking Water Investigation section below. A remedial investigation at Area 6 will be conducted.

OLF Coupeville

OLF Coupeville is a Navy airfield associated with NAS Whidbey Island, located 2 miles southeast of Coupeville, in Island County, Washington (**Figure 1**). It is composed of a paved runway oriented north-northwest to south-southeast. The paved runway is approximately 5,400 feet long and is bordered by grass maintained by mowing operations extending to the public roads. A runway safety area extends approximately 3,300 feet south of the runway footprint and is bordered by trees and residential parcels. The airfield was commissioned for use by the Navy in 1943 and provides support for day and night field carrier landing practice operations by the Navy for aircraft based out of NAS Whidbey Island.

In 2016, PFAS were first detected in one of the on-Base drinking water wells located in the southwest portion of the OLF Coupeville near Building 2807 during groundwater sampling activities conducted under the Navy's June 2016 Policy Memo (DASN (E), 2016) (**Figure 2**). As a result, an expedited SI was conducted, and 31 groundwater monitoring wells were installed and sampled for PFAS in 2016 and 2017 (CH2M, 2019d). Of the 31 groundwater monitoring wells, PFAS was detected in 13 of the wells and PFOA and/or PFOS exceeded the USEPA health advisories in 6 of the 13 groundwater monitoring wells.

In 2018, a PA was conducted for OLF Coupeville and identified 2 potential PFAS source areas, Building 2709 (Crash Truck Shelter) and Facilities 1, 2, and 11 (Control Tower, Airfield Operations Building, and Potable Water Well Pump House). As a result of the PA findings and the expedited SI results, a supplemental SI is ongoing at OLF Coupeville to further refine the conceptual site model and identify PFAS source areas and migration pathways. A remedial investigation will be conducted at OLF Coupeville.

Previous Off-Base Drinking Water Investigations

Off-base drinking water sampling near Ault Field and OLF Coupeville was initially conducted from November 2016 to June 2017 (CH2M, 2019b,c). Sampling was conducted under a phased, voluntary sampling program (**Figures 2 and 3**). The initial sampling areas³ included off-Base drinking water wells within a 1-mile radius of sites with suspected or confirmed usage of AFFF. Subsequent sampling phases were implemented with expanded sampling areas based on the results of previous phases. Three sampling phases were conducted in areas adjacent to Ault Field, during which PFOA and/or PFOS were detected above the USEPA health advisories in two off-Base wells. In response to PFAS detections in a stormwater drain near Hangar 6 and in an associated stormwater drainage system, a fourth sampling phase was conducted from January to February 2019, during which no additional off-Base drinking water wells exceeded the USEPA health advisories for PFAS. Two sampling phases were conducted in areas adjacent to OLF Coupeville, during which PFOA and/or PFOS were detected above the USEPA health advisories in seven off-Base wells.

Beginning in October 2017, a semiannual sampling program was implemented for Ault Field and OLF Coupeville that included all off-Base drinking water wells that had previously had detections of PFOA and/or PFOS (either above or below the USEPA health advisories) and wells on parcels adjacent to those with wells that had previously exceeded the USEPA health advisories for PFOA and/or PFOS. These adjacent properties included some wells that had not previously been sampled during the phased investigation. During the October 2017 event, PFOA was detected above the USEPA health advisory in a well on one of these adjacent properties in Coupeville that had not

³ Subsequent to the initial round of drinking water sampling performed in 2016 and 2017, a preliminary assessment (CH2M, 2018) was conducted at Ault Field and identified 35 potential source areas (including Area 6) with suspected or potential releases requiring further investigation. The initial 1-mile downgradient boundary and subsequent ½ miles step-outs defined in the 2016 and 2017 investigation was established from Area 16, Area 31, and the Current Fire Training School; however, the sampling areas also encompass residences within the 1-mile downgradient direction of potential PFAS source areas identified in the PA.

previously been sampled for a total number of eight drinking water wells above the USEPA health advisories in Coupeville.

From February 2018 to April 2019, the Navy conducted drinking water sampling at residences near Area 6 (CH2M, 2020b). Drinking water sampling results from this investigation indicated that PFAS are present above the USEPA health advisories in five drinking water wells. In October-November 2019, an additional drinking water well with PFAS present above the USEPA health advisories was identified for a total of six drinking water wells above the USEPA health advisories near Area 6.

Temporary interim solution measures have been taken to supply potable water to residences where the drinking water results exceeded the USEPA health advisories. For most residences, this consists of bottled water delivery which commenced in December 2016 and is ongoing. At one of the residences, a point-of-use water treatment system was installed in May 2018 which treats the contaminated well water to non-detectable levels of PFAS and provides potable water to the residence (CH2M, 2019a). This residence no longer receives bottled water. Additionally, seven residences near OLF Coupeville (4 residences with single party wells and 3 residences that share a multi-party well) were connected to Town of Coupeville water in March 2020. These residences will continue to receive bottled water until final project acceptance.

Geology and Hydrogeology

Ault Field and Area 6

Whidbey Island lies within the Puget Lowland, a topographic and structural depression between the Olympic Mountains and the Cascade Range. The surface soil in the vicinity of Ault Field and Area 6 primarily consists of artificial fill, post-glacial deposits, glaciomarine drift, and glacial deposits. Artificial fill, consisting of coarse- or fine-grained material, underlies the runway areas. Post-glacial deposits, consisting of peaty sand and silt, are generally found in the low-lying marshy areas (Navy, 1994).

There are three main aquifers that underlie Ault Field and Area 6 that are referred to as the shallow aquifer, intermediate aquifer, and sea-level aquifer. Ault Field is located in a valley, with elevated areas to the southwest, northeast, and southeast of the field. In general, groundwater flow in the shallow aquifer mimics topography. In the northwestern portion of Ault Field groundwater flow in the shallow aquifer flows west-northwest toward the Strait of Juan de Fuca (Navy, 1994). Across the remainder of the Ault Field, east of the runway, groundwater generally flows to the east, northeast, and southeast toward Clover Valley Stream, Clover Valley Lagoon, and Dugualla Bay. West of the runway and current Firefighting School, there is likely a component of flow to the west toward the Strait of Juan de Fuca. Groundwater flow in the intermediate and deep aquifers at Ault Field and is not well known due to limited monitoring wells screened within the intermediate and deep aquifers.

At Area 6, groundwater flow in the shallow aquifer predominantly flows to the south; however, there is a potential local southwesterly component of groundwater flow in the northwestern corner of Area 6. Groundwater flow in the intermediate aquifer at Area 6 is predominantly to the southeast, while groundwater flow within the deep aquifer ranges from the southeast to southwest (URS, 1993).

OLF Coupeville

Surficial geology at OLF Coupeville consists of the Partridge Gravel, which is composed of sand, gravel, and sand-gravel mixtures with minor inter-layered silt and silty sand. Bedding planes in the formation generally dip toward the west in the vicinity of OLF Coupeville. Undivided Pleistocene deposits lie beneath the Partridge Gravel. These deposits consist of poorly sorted, mildly compact sands.

There are three designated hydrogeologic zones present underneath OLF Coupeville that are referred to as the shallow zone, intermediate zone, and deep zone (CH2M, 2018). The shallow, intermediate, and deep elevation zone designations do not indicate three discrete aquifers or water-bearing zones. Rather, the shallow, intermediate, and deep elevation zones are located within the single aquifer system. Most local water supply wells are completed in the intermediate and deep elevation zones.

The dominant flow direction in the intermediate zone is to the southwest in the northern portion of the site, shifting to the south-southeast in the southern portion of the site. Groundwater flow in the deep zone is generally to the south. In general, the overall groundwater flow direction appears to be consistent regardless of tidal influence (CH2M, 2018).

Migration Pathways and Potential Receptors and Exposure Routes

Previous investigations of Ault Field, Area 6, and OLF Coupeville have identified releases of PFAS to soil, groundwater and/or stormwater in the areas. PFAS in groundwater and stormwater have migrated off-base and may have resulted in exceedance of the USEPA health advisories for PFOA and PFOS in samples from off-base private drinking water wells.

Drinking Water Source Evaluation

All water for Ault Field and Area 6 is purchased from the City of Oak Harbor, which obtains its water from the City of Anacortes. The Washington Department of Ecology well database (2016) was used as the primary source for evaluating drinking water receptors off-Base, plus individual letters sent to off-Base property owners within the sampling areas. Multiple private and community drinking water wells were identified off-Base within 1 mile of on-Base source areas during the initial drinking water source evaluation conducted as part of the voluntary phased drinking water sampling performed in 2016 and 2017 (2019b; 2020b). Off-Base drinking water wells are located in the phased off-Base sampling areas for Ault Field and Area 6 shown on **Figure 2**.

OLF Coupeville uses two drinking water wells located on-Base, screened within the regional aquifer (178 feet bgs). The Washington Department of Ecology well database was used as the primary source for evaluating drinking water receptors off-Base, plus individual letters sent to off-Base property owners within the sampling areas. Multiple private and community drinking water wells were identified off-Base within 1 mile of on-Base source areas, including the Town of Coupeville (Fort Casey well field and Keystone well) supply wells during the initial drinking water source evaluation conducted as part of the voluntary phased drinking water sampling performed in 2016 and 2017 (2019c). Off-Base drinking water wells are located in the phased off-Base sampling areas for OLF Coupeville shown on **Figure 3**.

Summary of Field Activities

This section provides a summary of field investigation activities conducted for two sampling events, including mobilization and dates of fieldwork, sampling activities, and sample packing and shipping procedures. All field activities were conducted in accordance with the standard operating procedures outlined in the SAP (CH2M, 2020a). Sample collection from private drinking water wells was conducted only at parcels where permission to collect samples was granted by the owner.

Mobilization

For the October 2019-January 2020 sampling event, CH2M staff mobilized to Whidbey Island on October 28, 2019. Scheduled sampling appointments occurred from October 29 through November 8, 2019 at locations in Oak Harbor and Coupeville. Additional mobilizations to Whidbey Island occurred on December 12, 2019, to resample one well due to an error in sample management, and on January 16, 2020, to sample a well that had not been scheduled during the first mobilization.

For the May-September 2020 sampling event, CH2M staff mobilized to Whidbey Island on May 18, 2020. Scheduled sampling appointments occurred from May 18 through May 27, 2020 at locations in Oak Harbor and Coupeville. A second mobilization occurred on June 18, 2020 to resample a well to confirm anomalously high results. Other additional mobilizations occurred on July 31, 2020 and September 3, 2020 to sample locations that were not scheduled during the first mobilization.

Summary of Sampling Activities

The following samples and associated field quality control samples were collected during the October 2019-January 2020 sampling event:

- 11 drinking water samples from off-Base drinking water wells near Ault Field
- 8 drinking water samples from off-Base drinking water wells near Area 6
- 26 drinking water samples from off-Base drinking water wells near OLF Coupeville.

The following samples and associated field quality control samples were collected during the May-September 2020 sampling event:

- 10 drinking water samples from off-Base drinking water wells near Ault Field (includes resample collected in June 2020)
- 8 drinking water samples from off-Base drinking water wells near Area 6
- 23 drinking water samples from off-Base drinking water wells near OLF Coupeville.

Samples were collected in accordance with the Standard Operating Procedure for *Drinking Water Sampling when Analyzing for PFAS*, provided in Attachment A of the SAP (CH2M, 2020a). Drinking water was collected from sample ports near the wells, outside spigots, or faucets inside the homes. Samples were collected directly into Trizma-preserved 250-milliliter, polypropylene sample bottles. Additional sample details are provided in **Tables 1** through **3**.

Quality control samples included field reagent blanks (FRBs), field duplicates (FDs), and matrix spike/matrix spike duplicates (MS/MSDs).

FRBs were collected at each sampling location by pouring lab-certified PFAS-free water pre-preserved with Trizma (provided by the laboratory) into empty sample bottles. Field duplicates were collected in the same manner as regular samples at a rate of one per every ten sample locations. MS/MSDs were collected in the same manner as regular samples at a rate of one per every twenty sample locations.

Sample Packing and Shipping Procedures

Sample bottles were properly labeled, placed into resealable zipper storage bags, then placed into a heavy-duty garbage bag, which was placed into the shipping coolers provided by the laboratory (Vista Analytical Laboratory). The cooler was then packed with ice. A temperature blank provided by the laboratory and the completed chains-of-custody, provided in **Attachment 1**, were included in each cooler. The coolers were shipped via FedEx priority overnight to the laboratory.

Summary of Sample Results

This section provides a brief discussion of the project action limits (PALs), as well as a summary of laboratory results for the drinking water samples collected for analysis of the following 18 PFAS listed in USEPA Method 537.1: PFOA, PFOS, PFBS, n-ethyl perfluorooctanesulfonamidoacetic acid (EtFOSAA), n-methyl perfluorooctanesulfonamidoacetic acid (MeFOSAA), perfluorodecanoic acid (PFDA), perfluorododecanoic acid (PFDoA), perfluoroheptanoic acid (PFHpA), perfluorohexanesulfonic acid (PFHxS), perfluorohexanoic acid (PFHxA), perfluorononanoic acid (PFNA), perfluorotetradecanoic acid (PFTeDA), perfluorotridecanoic acid (PFTTrDA), perfluoroundecanoic acid (PFUnA), hexafluoropropylene oxide dimer acid (HFPO-DA), 4,8-dioxa-3H-perfluorononanoic acid (ADONA), 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS), and 9-chlorohexadecafluoro-3-oxanone-1-sulfonic (9Cl-PF3ONS). This section also includes a data validation summary and usability assessment.

Project Action Limits

As indicated in the SAP (CH2M, 2020a), the PALs for this project are the USEPA health advisories for PFOA, PFOS, and the sum of PFOA + PFOS (70 ng/L). Results will be screened against the USEPA Regional Screening Level (RSL) for PFBS (40,000 ng/L) (based on a hazard quotient of 0.1) (USEPA, 2018); however, no actions will be taken if the results exceed the RSL. This RSL is provided for informational purposes only. EtFOSAA, MeFOSAA, PFDA, PFDoA, PFHpA, PFHxS, PFHxA, PFNA, PFTeDA, PFTrDA, PFUnA, HFPO-DA, ADONA, 11CI-PF3OUdS, and 9CI-PF3ONS currently do not have established screening values for comparison. Data will be archived for future comparison if screening values are established.

Ault Field Sampling Results

October 2019-January 2020

A total of 11 drinking water samples were collected from off-Base drinking water wells near Ault Field. Sampled wells included 8 single-residence drinking water wells, 2 multi-party drinking water wells, and 1 backup drinking water well. Of the 11 samples collected during the October 2019-January 2020 event, 1 sample exceeded the PALs for PFOS and the sum of PFOA + PFOS. All samples collected were analyzed for 18 PFAS compounds using USEPA Method 537.1 in accordance with the SAP. A summary of detections and exceedances are provided in **Table 4** and a summary of PFOA and PFOS results for October 2019-January 2020 are shown in **Figure 4**. Raw data is provided in **Attachment 2**.

- **PFBS** – PFBS was detected in 5 samples, ranging from an estimated 2.28 J ng/L in sample WI-AF-1RW28-1119 to 312 J ng/L in sample WI-AF-1RW32-1119. None of the detections of PFBS exceeded the RSL of 40,000 ng/L.
- **PFOS** – PFOS was detected in 4 samples, ranging from an estimated 2.94 J ng/L in sample WI-AF-1RW77-1119 to 7,690 ng/L in sample WI-AF-1RW32-1119. Concentrations in one sample exceeded the PAL for PFOS.
- **PFOA** – PFOA was detected in 5 samples, ranging from an estimated 4.78 J ng/L in sample WI-AF-3RW41-1119 to 51.7 J ng/L in sample WI-AF-1RW32-1119. None of the detections of PFOA exceeded the PAL.
- **PFOA + PFOS** – PFOA and PFOS were detected in 4 samples. The sum of PFOA + PFOS ranged from an estimated 13.7 ng/L in sample WI-AF-1RW77-1119 to 7,742 ng/L in sample WI-AF-1RW32-1119. Concentrations in one sample exceeded the PAL for PFOA+PFOS.

May-September 2020

A total of 10 drinking water samples were collected from off-Base drinking water wells near Ault Field including two samples from WI-AF-1RW32. Sampled wells included 9 single-residence drinking water wells (2 from WI-AF-1RW32) and 1 multi-party drinking water well (**Figure 2**). Of the 12 samples collected during the May-September 2020 event, 2 samples exceeded the PALs for PFOS, PFOA, and the sum of PFOA + PFOS. All samples collected were analyzed for 18 PFAS compounds specified in accordance with the SAP. A summary of detections and exceedances are provided in **Table 4** and a summary of PFOA and PFOS results are shown in **Figure 5**. Raw data is provided in **Attachment 2**.

- **PFBS** – PFBS was detected in 7 samples, ranging from 2.48 ng/L in sample WI-AF-1RW28-0520 to 1,720 ng/L in sample WI-AF-1RW32-0620. None of the detections of PFBS exceeded the RSL of 40,000 ng/L.
- **PFOS** – PFOS was detected in 6 samples, ranging from an estimated 0.85 J ng/L in sample WI-AF-1RW28-0520 to 43,100 ng/L in sample WI-AF-1RW32-0620. Concentrations in 2 samples (both from WI-AF-1RW32) exceeded the PAL for PFOS.
- **PFOA** – PFOA was detected in 6 samples, ranging from 5.70 ng/L in sample WI-AF-1RW12-0520 to 251 ng/L in sample WI-AF-1RW32-0620. Concentrations in 2 samples (both from WI-AF-1RW32) exceeded the PAL for PFOA.

- **PFOA + PFOS** – Both PFOA and/or PFOS were detected in 6 samples. The sum of PFOA + PFOS ranged from an estimated 7.89 ng/L in sample WI-AF-1RW12-0520 to 43,351 ng/L in sample WI-AF-1RW32-0620. Concentrations in two samples (both from WI-AF-1RW32) exceeded the PAL for PFOA+PFOS.

Area 6 Sampling Results

October 2019-January 2020

A total of 8 drinking water samples were collected from off-Base drinking water wells near Area 6. Sampled wells included 5 single-residence drinking water wells, 2 multi-party drinking water wells, and 1 backup drinking water well. Of the 8 samples collected during the October 2019-January 2020 event, 4 samples exceeded the PALs for PFOS and the sum of PFOA + PFOS. All samples collected were analyzed for the 18 PFAS compounds specified in accordance with the SAP. A summary of detections and exceedances are provided in **Table 5** and are shown on **Figure 4**. Raw data is provided in **Attachment 2**.

- **PFBS** – PFBS was detected in 8 samples, ranging from 21.0 ng/L in sample WI-A06-RW05-1119 to 53.9 ng/L in sample WI-A06-RW14-1119. None of the detections of PFBS exceeded the RSL of 40,000 ng/L.
- **PFOS** – PFOS was detected in 8 samples, ranging from an estimated 2.21 J ng/L in sample WI-A06-RW04-1119 to 203 ng/L in sample WI-A06-RW24-1019. Concentrations in 4 samples exceeded the PAL for PFOS.
- **PFOA** – PFOA was detected in 8 samples, ranging from 24.5 ng/L in sample WI-A06-RW18-1119 to 53.0 ng/L in sample WI-A06-RW24-1019. None of the detections of PFOA exceeded the PAL.
- **PFOA + PFOS** – Both PFOA and PFOS were detected in 8 samples. The sum of PFOA + PFOS ranged from an estimated 6.07 ng/L in sample WI-A06-RW04-1119 to 256 ng/L in sample WI-A06-RW24-1019. Concentrations in 4 samples exceeded the PAL for PFOA+PFOS.

May-September 2020

A total of 8 drinking water samples were collected from off-Base drinking water wells near Area 6. Sampled wells included 5 single-residence drinking water wells, 2 multi-party drinking water wells, and 1 backup drinking water well. Of the 8 samples collected during the May-September 2020 event, 2 samples exceeded the PALs for PFOS and the sum of PFOA + PFOS, while 2 samples exceeded the PAL for the sum of PFOA + PFOS only. All samples collected were analyzed for the 18 PFAS compounds specified in accordance with the SAP. A summary of detections and exceedances are provided in **Table 5** and are shown on **Figure 5**. Raw data is provided in **Attachment 2**.

- **PFBS** - PFBS was detected in 8 samples, ranging from 19.8 ng/L in sample WI-A06-RW20P-0920 to 53.8 ng/L in sample WI-A06-RW14-0520. None of the detections of PFBS exceeded the RSL of 40,000 ng/L.
- **PFOS** – PFOS was detected in 8 samples, ranging from 5.34 ng/L in sample WI-A06-RW04-0520 to 189 ng/L in sample WI-A06-RW24-0520. Concentrations in 2 samples exceeded the PAL for PFOS.
- **PFOA** – PFOA was detected in 8 samples, ranging from 3.98 ng/L in sample WI-A06-RW04-0520 to 56.2 ng/L in sample WI-A06-RW05-0520. None of the detections of PFOA exceeded the PAL.
- **PFOA + PFOS** – Both PFOA and PFOS were detected in 8 samples. The sum of PFOA + PFOS ranged from 9.32 ng/L in sample WI-A06-RW04-0520 to 234 ng/L in sample WI-A06-RW24-0520. Concentrations in 4 samples exceeded PAL for PFOA+PFOS.

OLF Coupeville Sampling Results

October 2019-January 2020

A total of 26 drinking water samples were collected from off-Base drinking water sources near OLF Coupeville. Sampled locations included 19 single-residence drinking water wells, 2 multi-party drinking water wells, 4 Town of Coupeville water supply wells, and 1 sample taken from a post-treatment location at the Town of Coupeville

water treatment plant. Of the 26 samples collected during the October 2019-January 2020 event, 8 samples exceeded the PALs for PFOA and the sum of PFOA + PFOS; however, PFOS was only detected in 1 of the 8 samples. All samples collected were analyzed for 18 PFAS compounds specified in accordance with the SAP. A summary of detections and exceedances are provided in **Table 6** and a summary of PFOA and PFOS results are shown in **Figure 6**. Raw data is provided in **Attachment 2**.

- **PFBS** – PFBS was detected in 12 samples, ranging from an estimated 1.91 J ng/L in sample WI-CV-1RW72-1019 to 167 ng/L in sample WI-CV-3RW10-1019. None of the detections of PFBS exceeded the RSL of 40,000 ng/L.
- **PFOS** – PFOS was detected in 2 samples, ranging from an estimated 9.01 J ng/L in sample WI-CV-1RW90-1119 to 13.4 ng/L in sample WI-CV-2RW04-1019. None of the detections of PFOS exceeded the PAL.
- **PFOA** – PFOA was detected in 10 samples, ranging from an estimated 9.19 J ng/L in sample WI-CV-2RW04-1019 to 425 ng/L in sample WI-CV-3RW11-1019. Concentrations in 8 samples exceeded PAL for PFOA.
- **PFOA + PFOS** – PFOA and PFOS were detected in 2 samples. The sum of PFOA + PFOS ranged from an estimated 22.6 ng/L in sample WI-CV-2RW04-1019 to 425 ng/L in sample WI-CV-3RW11-1019. Concentrations in 8 samples exceeded the PAL for PFOA+PFOS.

May-September 2020

A total of 23 drinking water samples were collected from off-Base drinking water sources near OLF Coupeville. Sampled locations included 17 single-residence drinking water wells, 2 multi-party drinking water wells, 3 Town of Coupeville water supply wells, and 1 sample taken from a post-treatment location at the Town of Coupeville water treatment plant. Of the 23 samples collected during the May-September 2020 event, 8 samples exceeded the PALs for PFOA and the sum of PFOA + PFOS; however, PFOS was only detected in 3 of the 8 samples. All samples collected were analyzed for 18 PFAS compounds specified in accordance with the SAP. A summary of detections and exceedances are provided in **Table 6** and a summary of PFOA and PFOS results are shown in **Figure 7**. Raw data is provided in **Attachment 2**.

- **PFBS** – PFBS was detected in 12 samples, ranging from an estimated 1.43 J ng/L in sample WI-CV-1RW72-0520 to 203 ng/L in sample WI-CV-3RW10-0520. None of the detections of PFBS exceeded the RSL of 40,000 ng/L.
- **PFOS** – PFOS was detected in 8 samples, ranging from an estimated 1.44 J ng/L in sample WI-CV-1RW23-0520 to 13.2 ng/L in sample WI-CV-2RW04-0520. None of the detections of PFOS exceeded the PAL.
- **PFOA** – PFOA was detected in 12 samples, ranging from an estimated 1.26 ng/L in sample WI-CV-1RW72-0520 to 409 ng/L in sample WI-CV-1RW34-0520. Concentrations in 8 samples exceeded PAL for PFOA.
- **PFOA + PFOS** – PFOA and PFOS were detected in 8 samples. The sum of PFOA + PFOS ranged from an estimated 1.26 ng/L in sample WI-CV-1RW72-0520 to 409 ng/L in sample WI-CV-1RW34-0520. Concentrations in 8 samples exceeded the PAL for PFOA+PFOS.

Data Quality Summary

No quality control deficiencies were found that resulted in rejected data points; all data are available for use. The Data Validation Summary Reports are provided in **Attachment 3**.

A double-blind proficiency test (PT) sample was analyzed during the May-September 2020 sampling event. A third-party subcontractor provided a sample spiked with three PFAS compounds (PFBS, PFOA, and PFOS) of known concentrations in laboratory sample bottles. The PT sample was submitted to the laboratory in the same fashion as a field sample along with a corresponding FRB sample containing PT reagent water pre-preserved with Trizma. Recovery of the three spiked PFAS compounds met the acceptance criteria listed on the certificate of analysis provided by the PT provider. The lab reported PFBS at 52.5 ng/L with a certified value of 49.5 ng/L and acceptance range of 29.7-69.3 ng/L. PFOS was reported at 24.2 ng/L with a certified value of 24.2 ng/L and acceptance range of 15.1-35.1 ng/L. PFOA was reported by the lab at 50.5 ng/L with a certified value of 50.2 ng/L and acceptance range of 30.1-70.3 ng/L. There was an additional detection of PFHpA between the detection limit

(DL) and the limit of detection (LOD), however the corresponding FRB also contained a detection of this compound at a similar concentration. Overall, the PT sample met acceptance criteria.

Conclusions

PFAS were detected in 26 off-Base drinking water supply wells near NAS Whidbey Island in October 2019-January 2020, and PFAS was detected in 29 off-Base drinking water supply wells (including 2 detections from WI-AF-1RW32) in May-September 2020. Of the 26 drinking water wells with PFAS detections in the October 2019-January 2020 sampling event, 8 had detections in exceedance of the PALs for PFOA and the sum of PFOA + PFOS, and 5 had detections in exceedance of the PALs for PFOS and the sum of PFOA + PFOS (for a total of 13 wells with exceedances). Of the 29 drinking water wells with PFAS detections in the May-September 2020 sampling event, 8 had detections in exceedance of the PALs for PFOA and the sum of PFOA + PFOS, 2 had detections in exceedance of the PALs for PFOS and the sum of PFOA + PFOS, 2 had detections in exceedance of the PALs for PFOA, PFOS, and the sum of PFOA + PFOS, and 2 had detections in exceedance of the PAL for the sum of PFOA + PFOS (for a total of 14 wells with exceedances). During the October 2019-January 2020 sampling event, one drinking water well near Area 6, which had not previously been sampled, had concentrations of PFOS and PFOA + PFOS in exceedance of the PALs. This residence was supplied bottled water within 24 hours of receipt of preliminary results in accordance with the SAP. There were no exceedances of the PALs in drinking water wells that had not previously had exceedances for the May-September 2020 sampling event.

Due to the continued detection of PFOA and PFOS in exceedance of USEPA health advisories in drinking water wells near NAS Whidbey Island, further investigation is ongoing to evaluate the on-Base source for detections in off-Base drinking water to evaluate offsite migration pathways of PFAS from Ault Field, Area 6 and OLF Coupeville. Additional off-Base investigation is ongoing (under Navy Contract N62470-16-D-9000, Contract Task Order 4470), to determine the temporal and spatial variability of PFAS in off-Base drinking water wells with previous PFAS detections and wells adjacent to PFAS exceedances. Monitoring will continue for at least 5 years from the initial round of off-Base drinking water sampling to allow for sufficient data collection so that an evaluation of the PFAS data for temporal and spatial trends can be conducted. In accordance with the SAP, residences served by drinking water wells with PFAS exceedances will continue to receive alternate water sources until a long-term solution can be implemented.

References

- ALS Environmental. 2016. Analytical Report for Service Request No. K161172, Naval Air Station Outlying Field Coupeville, Coupeville, Washington. October.
- CH2M HILL, Inc. (CH2M). 2020a. *Final Sampling and Analysis Plan, Investigation of Per- and Polyfluorinated Substances in Off-Base Drinking Water, Ault Field, Area 6, and Outlying Landing Field Coupeville, Naval Air Station Whidbey Island Oak Harbor, Washington*. April.
- CH2M. 2020b. *Evaluation of Per- and Polyfluoroalkyl Substances, 1,4 Dioxane, and Vinyl Chloride in Groundwater and Drinking Water, Ault Field, Area 6 Naval Air Station Whidbey Island, Oak Harbor, Washington*. June.
- CH2M. 2019a. *Evaluation of Time-Critical Removal Action, Point-of-Use Treatment 12-Week Use Monitoring, Outlying Landing Field Coupeville, Naval Air Station Whidbey Island, Oak Harbor, Washington*. April.
- CH2M. 2019b. *Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water— Ault Field, Naval Air Station Whidbey Island, Washington*. September.
- CH2M. 2019c. *Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water—Outlying Landing Field Coupeville, Naval Air Station Whidbey Island, Coupeville, Washington*. April.
- CH2M. 2019d. *Final Sampling and Analysis Plan Supplemental Site Inspection, Outlying Landing Field Coupeville, Naval Air Station Whidbey Island, Oak Harbor, Washington*. August.

CH2M. 2018a. *Preliminary Assessment for Per- and Polyfluoroalkyl Substances (PFAS), Ault Field, Naval Air Station Whidbey Island, Oak Harbor, Washington*. November.

CH2M. 2018b. *Final Sampling and Analysis Plan Addendum Investigation of Per- and Polyfluoroalkyl Substances in Drinking Water, Ault Field and Outlying Landing Field Coupeville, Naval Air Station Whidbey Island, Washington*. October.

CH2M. 2017a. *Final Sampling and Analysis Plan Investigation of Perfluorinated Compounds in Drinking Water, Naval Air Station Whidbey Island*. January.

CH2M. 2017b. *Final Sampling and Analysis Plan, Investigation of Per- and Polyfluoroalkyl Substances in Drinking Water, Ault Field and Outlying Landing Field Coupeville, Naval Air Station Whidbey Island, Oak Harbor and Coupeville, Washington*. November.

Deputy of the Navy Office of the Assistant Secretary Energy, Installations, and Environment (DASN [E]). 2016a. Policy Memo: Perfluorinated Compounds (PFCs) Drinking Water System Requirement. June 14.

Department of the Navy (Navy). 1994. *Final Remedial Investigation Report for Operable Unit 3, Naval Air Station Whidbey Island. Prepared for Engineering Field Activity Northwest, Naval Facilities Engineering Command by URS Consultants Under Contract No. N62474-89-D-9295, CTO 0074*. January.

Navy. 2014. *Perfluorinated Compounds (PFCs) – An Emerging Environmental Issue*. 21 October.

Navy. 2016a. *Summary Report, Groundwater Sampling for Perfluorinated Compounds, Hangar 5 and Areas 16 and 31, NAS Whidbey, Oak Harbor, Washington*. Prepared for Naval Facilities Engineering Command Northwest by MMEC Group under Contract. No. N62473-12-D-2012, CTP JP02. April 14.

Navy. 2016b. Perfluorinated Compounds (PFCs) Drinking Water System Testing Requirement. 14 June.

Navy. 2016c. Perfluorinated Compounds/Perfluoroalkyl Substances (PFC/PFAS) – Identification of Potential Areas of Concern (AOCs). 20 June.

Polenz, M., S. Slaughter, and G. Thorsen. 2005. *Geologic Map of the Coupeville and Part of the Port Townsend North 7.5-minute Quadrangles, Island County, Washington*. June.

Sealaska. 2018. *Annual 2017-2018 Groundwater Long-Term Monitoring Report for Operable Unit 1 Area 6 and Operable Unit 5 Area 31. Naval Air Station Whidbey Island, Oak Harbor, Washington*. November.

Washington Department of Ecology well database. Accessed 2016.

<https://fortress.wa.gov/ecy/wellconstruction/map/WCLWebMap/default.aspx>

United States Environmental Protection Agency (USEPA). 2016a. *Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA)*. EPA 822-R-16-005. Office of Water. May.

URS Consultants (URS). 1993. *Remedial Investigation, Operable Unit, 1 Naval Air Station Whidbey Island, Oak Harbor, Washington. Poulsbo, Washington*. June.

USEPA. 2016b. *Drinking Water Health Advisory for Perfluorooctane Sulfonate (PFOS)*. EPA 822-R-16-004. Office of Water. May.

USEPA. 2018. *Regional Screening Level (RSL) Resident Tap Water Table*. May.

Tables

Table 1. Sample Summary

*Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water—
Ault Field*

Station ID	Sample ID	Sample Date/Time	QC Sample ID	Well Water Use
<i>October 2019-January 2020</i>				
WI-AF-1RW01	WI-AF-1RW01-1119	11/4/19 13:10	WI-AF-1FB01-1119	Drinking
	WI-AF-1RW01P-1119	11/4/19 13:15		Drinking
WI-AF-1RW12	WI-AF-1RW12-1119	11/5/19 11:15	WI-AF-1FB12-1119	Drinking
WI-AF-1RW28	WI-AF-1RW28-1119	11/5/19 16:30	WI-AF-1FB28-1119	Drinking
WI-AF-1RW32	WI-AF-1RW32-1119	11/4/19 10:00	WI-AF-1FB32-1119	Drinking
WI-AF-1RW33	WI-AF-1RW33-1119	11/4/19 14:05	WI-AF-1FB33-1119	Drinking
WI-AF-1RW40	WI-AF-1RW40-1119	11/4/19 11:10	WI-AF-1FB40-1119	Drinking
WI-AF-1RW51	WI-AF-1RW51-1019	10/29/19 13:40	WI-AF-1FB51-1019	Drinking
WI-AF-1RW68	WI-AF-1RW68-1119	11/4/19 15:15	WI-AF-1FB68-1119	Drinking
WI-AF-1RW77	WI-AF-1RW77-1119	11/5/19 13:20	WI-AF-1FB77-1119	Drinking
	WI-AF-1RW77P-1119	11/5/19 13:25		Drinking
WI-AF-1RW104	WI-AF-1RW104-0120	1/16/20 11:40	WI-AF-1FB104-0120	Drinking
	WI-AF-1RW104P-0120	1/16/20 11:45		Drinking
WI-AF-3RW41	WI-AF-3RW41-1019	10/29/19 13:05	WI-AF-3FB41-1019	Drinking
<i>May-September 2020</i>				
WI-AF-1RW01	WI-AF-1RW01-0520	5/19/20 13:10	WI-AF-1FB01-0520	Drinking
WI-AF-1RW12	WI-AF-1RW12-0520	5/19/20 11:10	WI-AF-1FB12-0520	Drinking
	WI-AF-1RW12P-0520	5/19/20 11:15		Drinking
WI-AF-1RW28	WI-AF-1RW28-0520	5/20/20 14:50	WI-AF-1FB28-0520	Drinking
WI-AF-1RW32	WI-AF-1RW32-0520	5/19/20 8:55	WI-AF-1FB32-0520	Drinking
	WI-AF-1RW32-0620	6/18/20 11:15	WI-AF-1FB32-0620	Drinking
	WI-AF-1RW32P-0620	6/18/20 11:30		Drinking
WI-AF-1RW33	WI-AF-1RW33-0520	5/21/20 15:10	WI-AF-1FB33-0520	Drinking
WI-AF-1RW40	WI-AF-1RW40-0520	5/19/20 10:10	WI-AF-1FB40-0520	Drinking
WI-AF-1RW51	WI-AF-1RW51-0520	5/21/20 14:40	WI-AF-1FB51-0520	Drinking
WI-AF-1RW68	WI-AF-1RW68-0520	5/19/20 14:10	WI-AF-1FB68-0520	Drinking
WI-AF-3RW41	WI-AF-3RW41-0520	5/19/20 17:00	WI-AF-3FB41-0520	Drinking
	WI-AF-3RW41P-0520	5/19/20 17:05		Drinking

Table 2. Sample Summary

*Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water—
Area 6*

Station ID	Sample ID	Sample Date/Time	QC Sample ID	Well Water Use
<i>October 2019-January 2020</i>				
WI-A06-RW03	WI-A06-RW03-1119	11/4/19 16:10	WI-A06-FB03-1119	Drinking
	WI-A06-RW03P-1119	11/4/19 16:15		
WI-A06-RW04	WI-A06-RW04-1119	11/4/19 16:20	WI-A06-FB04-1119	Drinking
WI-A06-RW05	WI-A06-RW05-1119	11/6/19 8:00	WI-A06-FB05-1119	Drinking
WI-A06-RW08	WI-A06-RW08-1119	11/5/19 8:55	WI-A06-FB08-1119	Drinking
WI-A06-RW14	WI-A06-RW14-1119	11/5/19 10:25	WI-A06-FB14-1119	Drinking
WI-A06-RW18	WI-A06-RW18-1019	10/29/19 15:20	WI-A06-FB18-1019	Drinking
WI-A06-RW19	WI-A06-RW19-1119	11/5/19 8:05	WI-A06-FB19-1119	Drinking
WI-A06-RW24	WI-A06-RW24-1019	10/29/19 16:15	WI-A06-FB24-1019	Drinking
	WI-A06-RW24P-1019	10/29/19 16:20		
<i>May-September 2020</i>				
WI-A06-RW03	WI-A06-RW03-0520	5/19/20 16:10	WI-A06-FB03-0520	Drinking
	WI-A06-RW03P-0520	5/19/20 16:15		
WI-A06-RW04	WI-A06-RW04-0520	5/19/20 16:25	WI-A06-FB04-0520	Drinking
WI-A06-RW05	WI-A06-RW05-0520	5/19/20 15:05	WI-A06-FB05-0520	Drinking
WI-A06-RW14	WI-A06-RW14-0520	5/21/20 13:10	WI-A06-FB14-0520	Drinking
WI-A06-RW18	WI-A06-RW18-0520	5/21/20 14:10	WI-A06-FB18-0520	Drinking
WI-A06-RW19	WI-A06-RW19-0520	5/26/20 12:05	WI-A06-FB19-0520	Drinking
WI-A06-RW24	WI-A06-RW24-0520	5/26/20 10:15	WI-A06-FB24-0520	Drinking
WI-A06-RW20	WI-A06-RW20-0920	9/3/20 14:10	WI-A06-FB20-0920	Drinking
	WI-A06-RW20P-0920	9/3/20 14:15		

Table 3. Detections of PFAS in Drinking Water

Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water—

Area 6

Station ID	Sample ID	Sample Date/Time	QC Sample ID	Well Water Use
<i>October 2019-January 2020</i>				
WI-CV-1RW01	WI-CV-1RW01-1019	10/30/19 15:20	WI-CV-1FB01-1019	Drinking
WI-CV-1RW07	WI-CV-1RW07-1119	11/1/19 9:10	WI-CV-1FB07-1119	Drinking
	WI-CV-1RW07-1219	12/18/19 9:00	WI-CV-1FB07-1219	Drinking
WI-CV-1RW09	WI-CV-1RW09-1119	11/6/19 16:35	WI-CV-1FB09-1119	Drinking
WI-CV-1RW10	WI-CV-1RW10-1119	11/6/19 16:50	WI-CV-1FB10-1119	Drinking
WI-CV-1RW14	WI-CV-1RW14-1019	10/30/19 14:35	WI-CV-1FB14-1019	Drinking
WI-CV-1RW20	WI-CV-1RW20-1119	11/8/19 9:15	WI-CV-1FB20-1119	Drinking
WI-CV-1RW21	WI-CV-1RW21-1119	11/1/19 11:10	WI-CV-1FB21-1119	Drinking
	WI-CV-1RW21P-1119	11/1/19 11:15		Drinking
WI-CV-1RW22	WI-CV-1RW22-1019	10/31/19 11:20	WI-CV-1FB22-1019	Drinking
WI-CV-1RW23	WI-CV-1RW23-1019	10/31/19 9:50	WI-CV-1FB23-1019	Drinking
	WI-CV-1RW23P-1019	10/31/19 9:55		Drinking
WI-CV-1RW24	WI-CV-1RW24-1019	10/31/19 9:30	WI-CV-1FB24-1019	Drinking
WI-CV-1RW25	WI-CV-1RW25-1019	10/31/19 9:00	WI-CV-1FB25-1019	Drinking
WI-CV-1RW26	WI-CV-1RW26-1019	10/31/19 9:15	WI-CV-1FB26-1019	Drinking
WI-CV-1RW27	WI-CV-1RW27-1019	10/31/19 8:35	WI-CV-1FB27-1019	Drinking
WI-CV-1RW34	WI-CV-1RW34-1019	10/30/19 10:40	WI-CV-1FB34-1019	Drinking
WI-CV-1RW40	WI-CV-1RW40-1119	11/1/19 8:30	WI-CV-1FB40-1119	Drinking
	WI-CV-1RW40P-1119	11/1/19 8:35		Drinking
WI-CV-1RW67	WI-CV-1RW67-1119	11/8/19 10:10	WI-CV-1FB67-1119	Drinking
WI-CV-1RW72	WI-CV-1RW72-1019	10/29/19 9:05	WI-CV-1FB72-1019	Drinking
WI-CV-1RW90	WI-CV-1RW90-1119	11/20/19 12:00	WI-CV-1FB90-1119	Drinking
WI-CV-2RW02	WI-CV-2RW02-1019	10/30/19 14:10	WI-CV-2FB02-1019	Drinking
WI-CV-2RW04	WI-CV-2RW04-1019	10/31/19 11:00	WI-CV-2FB04-1019	Drinking
WI-CV-2RW06	WI-CV-2RW06-1019	10/30/19 13:05	WI-CV-2FB06-1019	Drinking
WI-CV-3RW07	WI-CV-3RW07-1019	10/30/19 8:05	WI-CV-3FB07-1019	Drinking
WI-CV-3RW10	WI-CV-3RW10-1019	10/30/19 9:05	WI-CV-3FB10-1019	Drinking
WI-CV-3RW11	WI-CV-3RW11-1019	10/30/19 10:10	WI-CV-3FB11-1019	Drinking
WI-CV-3RW17	WI-CV-3RW17-1119	11/1/19 10:20	WI-CV-3FB17-1119	Drinking
WI-CV-3RW18	WI-CV-3RW18-1119	11/8/2019 8:10	WI-CV-3FB18-1119	Drinking
	WI-CV-3RW18P-1119	11/8/2019 8:15		Drinking
<i>May-September 2020</i>				
WI-CV-1RW01	WI-CV-1RW01-0520	5/20/20 13:55	WI-CV-1FB01-0520	Drinking
WI-CV-1RW07	WI-CV-1RW07-0520	5/20/20 13:10	WI-CV-1FB07-0520	Drinking
	WI-CV-1RW07P-0520	5/20/20 13:15		Drinking
WI-CV-1RW09	WI-CV-1RW09-0520	5/26/20 14:50	WI-CV-1FB09-0520	Drinking
WI-CV-1RW14	WI-CV-1RW14-0520	5/22/20 12:50	WI-CV-1FB14-0520	Drinking
WI-CV-1RW22	WI-CV-1RW22-0520	5/18/20 16:10	WI-CV-1FB22-0520	Drinking
WI-CV-1RW23	WI-CV-1RW23-0520	5/20/20 10:10	WI-CV-1FB23-0520	Drinking
WI-CV-1RW25	WI-CV-1RW25-0520	5/20/20 9:35	WI-CV-1FB25-0520	Drinking

Table 3. Detections of PFAS in Drinking Water

*Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water—
Outlying Landing Field Coupeville*

Station ID	Sample ID	Sample Date/Time	QC Sample ID	Well Water Use
WI-CV-1RW26	WI-CV-1RW26-0520	5/20/20 9:50	WI-CV-1FB26-0520	Drinking
	WI-CV-1RW26P-0520	5/20/20 10:00		Drinking
WI-CV-1RW27	WI-CV-1RW27-0520	5/20/20 9:10	WI-CV-1FB27-0520	Drinking
WI-CV-1RW34	WI-CV-1RW34-0520	5/22/20 10:10	WI-CV-1FB34-0520	Drinking
WI-CV-1RW37	WI-CV-1RW37-0520	5/18/20 17:20	WI-CV-1FB37-0520	Drinking
WI-CV-1RW40	WI-CV-1RW40-0520	5/22/20 11:10	WI-CV-1FB40-0520	Drinking
WI-CV-1RW72	WI-CV-1RW72-0520	5/27/20 9:10	WI-CV-1FB72-0520	Drinking
WI-CV-1RW90	WI-CV-1RW90-0520	5/18/20 14:15	WI-CV-1FB90-0520	Drinking
	WI-CV-1RW90P-0520	5/18/20 14:20		Drinking
WI-CV-1RW92	WI-CV-1RW92-0720	7/31/20 11:10	WI-CV-1FB92-0520	Drinking
WI-CV-2RW02	WI-CV-2RW02-0520	5/22/20 9:00	WI-CV-2FB02-0520	Drinking
WI-CV-2RW04	WI-CV-2RW04-0520	5/18/20 15:10	WI-CV-2FB04-0520	Drinking
WI-CV-2RW06	WI-CV-2RW06-0520	5/18/20 11:20	WI-CV-2FB06-0520	Drinking
WI-CV-3RW07	WI-CV-3RW07-0520	5/26/20 13:00	WI-CV-3FB07-0520	Drinking
WI-CV-3RW10	WI-CV-3RW10-0520	5/18/20 10:05	WI-CV-3FB10-0520	Drinking
WI-CV-3RW11	WI-CV-3RW11-0520	5/20/20 11:40	WI-CV-3FB11-0520	Drinking
	WI-CV-3RW11P-0520	5/20/20 11:50		Drinking
WI-CV-3RW17	WI-CV-3RW17-0520	5/20/20 13:30	WI-CV-3FB17-0520	Drinking
WI-CV-3RW18	WI-CV-3RW18-0520	5/20/20 10:55	WI-CV-3FB18-0520	Drinking

Table 4. Detections of PFAS in Drinking Water

Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water
Ault Field

Station ID	USEPA Lifetime Health Advisory (May 2016)	USEPA RSL HQ = 0.1 (May 2018)	WI-AF-1RW01			WI-AF-1RW12			WI-AF-1RW28	
			WI-AF-1RW01-1119 11/04/19	WI-AF-1RW01P-1119 11/04/19	WI-AF-1RW01-0520 05/19/20	WI-AF-1RW12-1119 11/05/19	WI-AF-1RW12-0520 05/19/20	WI-AF-1RW12P-0520 05/19/20	WI-AF-1RW28-1119 11/05/19	WI-AF-1RW28-0520 05/20/20
Chemical Name										
Semivolatile Organic Compounds (NG/L)										
Perfluorobutanesulfonic acid (PFBS)	--	40,000	9.76 U	9.74 U	2.03 U	10 U	4.2	4.24	2.28 J	2.48
Perfluorooctane Sulfonate (PFOS)	70	--	9.76 U	9.74 U	2.03 U	10 U	2.19	2.22	10.1 U	0.85 J
Perfluorooctanoic acid (PFOA)	70	--	9.76 U	9.74 U	2.03 U	10 U	5.70	5.25	28.8	28.4
PFOA + PFOS	70	--	ND	ND	ND	ND	7.89	7.47	28.8	29.3

Notes:

Shading indicates detections

Bold indicates detection above lifetime health advisory

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

NG/L - Nanograms per liter

ND - Not detected

HQ - Hazard quotient

Table 4. Detections of PFAS in Drinking Water

Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water
Ault Field

Station ID	USEPA Lifetime Health Advisory (May 2016)	USEPA RSL HQ = 0.1 (May 2018)	WI-AF-1RW32				WI-AF-1RW33		WI-AF-1RW40	
			WI-AF-1RW32-1119 11/04/19	WI-AF-1RW32-0520 05/19/20	WI-AF-1RW32-0620 06/18/20	WI-AF-1RW32P-0620 06/18/20	WI-AF-1RW33-1119 11/04/19	WI-AF-1RW33-0520 05/21/20	WI-AF-1RW40-1119 11/04/19	WI-AF-1RW40-0520 05/19/20
Chemical Name										
Semivolatile Organic Compounds (NG/L)										
Perfluorobutanesulfonic acid (PFBS)	--	40,000	312 J	1050	1720	1670	70.6	65.6	4.24 J	2.92
Perfluorooctane Sulfonate (PFOS)	70	--	7690	36300	43100	42300	9.99 U	2.06 U	2.97 J	3.81
Perfluorooctanoic acid (PFOA)	70	--	51.7 J	231	251	247	9.99 U	2.06 U	13.9	7.90
PFOA + PFOS	70	--	7742	36531	43351	42547	ND	ND	16.9	11.71

Notes:

Shading indicates detections

Bold indicates detection above lifetime health advisory

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

NG/L - Nanograms per liter

ND - Not detected

HQ - Hazard quotient

Table 4. Detections of PFAS in Drinking Water

Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water
Ault Field

Station ID	USEPA Lifetime Health Advisory (May 2016)	USEPA RSL HQ = 0.1 (May 2018)	WI-AF-1RW51		WI-AF-1RW68		WI-AF-1RW77		WI-AF-1RW104	
Sample ID			WI-AF-1RW51-1019	WI-AF-1RW51-0520	WI-AF-1RW68-1119	WI-AF-1RW68-0520	WI-AF-1RW77-1119	WI-AF-1RW77P-1119	WI-AF-1RW104-0120	WI-AF-1RW104P-0120
Sample Date			10/29/19	05/21/20	11/04/19	05/19/20	11/05/19	11/05/19	01/16/20	01/16/20
Chemical Name										
Semivolatile Organic Compounds (NG/L)										
Perfluorobutanesulfonic acid (PFBS)	--	40,000	10.7 U	2.06 U	10.2 U	2.09 U	10.1 U	10.1 U	10.4 U	9.88 U
Perfluorooctane Sulfonate (PFOS)	70	--	10.7 U	2.06 U	10.2 U	2.09 U	2.94 J	2.19 J	10.4 U	9.88 U
Perfluorooctanoic acid (PFOA)	70	--	10.7 U	2.06 U	10.2 U	2.09 U	10.8	11.4	10.4 U	9.88 U
PFOA + PFOS	70	--	ND	ND	ND	ND	13.7	13.6	ND	ND

Notes:

Shading indicates detections

Bold indicates detection above lifetime health advisory

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

NG/L - Nanograms per liter

ND - Not detected

HQ - Hazard quotient

Table 4. Detections of PFAS in Drinking Water

Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water
Ault Field

Station ID	USEPA Lifetime Health Advisory (May 2016)	USEPA RSL HQ = 0.1 (May 2018)	WI-AF-3RW41		
			WI-AF-3RW41-1019 10/29/19	WI-AF-3RW41-0520 05/19/20	WI-AF-3RW41P-0520 5/19/2020
Sample ID					
Sample Date					
Chemical Name					
Semivolatile Organic Compounds (NG/L)					
Perfluorobutanesulfonic acid (PFBS)	--	40,000	56.9	57.4	57.6
Perfluorooctane Sulfonate (PFOS)	70	--	10.5	16.1	17.3
Perfluorooctanoic acid (PFOA)	70	--	4.78 J	5.58	5.71
PFOA + PFOS	70	--	15.3	21.7	23.0

Notes:

Shading indicates detections

Bold indicates detection above lifetime health advisory

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

NG/L - Nanograms per liter

ND - Not detected

HQ - Hazard quotient

Table 5. Detections of PFAS in Drinking Water

Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water
Area 6

Station ID	USEPA Lifetime Health Advisory (May 2016)	USEPA RSL HQ = 0.1 (May 2018)	WI-A06-RW03				WI-A06-RW04		WI-A06-RW05	
			WI-A06-RW03-1119 11/04/19	WI-A06-RW03P-1119 11/04/19	WI-A06-RW03-0520 05/19/20	WI-A06-RW03P-0520 05/19/20	WI-A06-RW04-1119 11/04/19	WI-A06-RW04-0520 05/19/20	WI-A06-RW05-1119 11/06/19	WI-A06-RW05-0520 05/19/20
Chemical Name										
Semivolatile Organic Compounds (NG/L)										
Perfluorobutanesulfonic acid (PFBS)	--	40,000	43.0	40.3	37.2	37.6	33.1	41.3	21.0	21.3
Perfluorooctane Sulfonate (PFOS)	70	--	17.2	15.9	13.7	12.8	2.21 J	5.34	76.1	56.2
Perfluorooctanoic acid (PFOA)	70	--	36.5	35.5	33.2	32.0	3.86 J	3.98	52.0	56.2
PFOA + PFOS	70	--	53.7	51.4	46.9	44.8	6.07	9.32	128.1	112.4

Notes:

Shading indicates detections

Bold indicates detection above lifetime health advisory

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

NG/L - Nanograms per liter

ND - Not detected

HQ - Hazard quotient

Table 5. Detections of PFAS in Drinking Water

Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water
Area 6

Station ID	USEPA Lifetime Health Advisory (May 2016)	USEPA RSL HQ = 0.1 (May 2018)	WI-A06-RW08	WI-A06-RW14		WI-A06-RW18		WI-A06-RW19	
Sample ID			WI-A06-RW08-1119	WI-A06-RW14-1119	WI-A06-RW14-0520	WI-A06-RW18-1019	WI-A06-RW18-0520	WI-A06-RW19-1119	WI-A06-RW19-0520
Sample Date			11/05/19	11/05/19	05/21/20	10/29/19	05/21/20	11/05/19	05/26/20
Chemical Name									
Semivolatile Organic Compounds (NG/L)									
Perfluorobutanesulfonic acid (PFBS)	--	40,000	22.0	53.9	53.8	22.6	21.9	52.8	50.4
Perfluorooctane Sulfonate (PFOS)	70	--	82.1	8.77 J	13.4	12.6	16.8	91.3	96.9
Perfluorooctanoic acid (PFOA)	70	--	28.6	24.8	24.8	24.5	28.7	41.4	46.4
PFOA + PFOS	70	--	110.7	33.6	38.2	37.1	45.5	132.7	143.3

Notes:

Shading indicates detections

Bold indicates detection above lifetime health advisory

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

NG/L - Nanograms per liter

ND - Not detected

HQ - Hazard quotient

Table 5. Detections of PFAS in Drinking Water

*Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water
Area 6*

Station ID	USEPA Lifetime Health Advisory (May 2016)	USEPA RSL HQ = 0.1 (May 2018)	WI-A06-RW24			WI-A06-RW20	
			WI-A06-RW24-1019 10/29/19	WI-A06-RW24P-1019 10/29/19	WI-A06-RW24-0520 05/26/20	WI-A06-RW20-0920 09/03/20	WI-A06-RW20P-0920 09/03/20
Chemical Name							
Semivolatile Organic Compounds (NG/L)							
Perfluorobutanesulfonic acid (PFBS)	--	40,000	25.7	29.8	19.9	20.6	19.8
Perfluorooctane Sulfonate (PFOS)	70	--	203	225	189	30.9	29.9
Perfluorooctanoic acid (PFOA)	70	--	53.0	50.9	44.9	48.3	47.0
PFOA + PFOS	70	--	256	276	234	79.2	76.9

Notes:

Shading indicates detections

Bold indicates detection above lifetime health advisory

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

NG/L - Nanograms per liter

ND - Not detected

HQ - Hazard quotient

Table 6. Detections of PFAS in Drinking Water

Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water
Area 6

Station ID	USEPA Lifetime Health Advisory (May 2016)	USEPA RSL HQ = 0.1 (May 2018)	WI-CV-1RW01		WI-CV-1RW07			WI-CV-1RW09		WI-CV-1RW10	WI-CV-1RW14	
Sample ID			WI-CV-1RW01-1019	WI-CV-1RW01-0520	WI-CV-1RW07-1219	WI-CV-1RW07-0520	WI-CV-1RW07P-0520	WI-CV-1RW09-1119	WI-CV-1RW09-0520	WI-CV-1RW10-1119	WI-CV-1RW14-1019	WI-CV-1RW14-0520
Sample Date			10/30/19	05/20/20	12/18/19	05/20/20	05/20/20	11/06/19	05/26/20	11/06/19	10/30/219	05/22/20
Chemical Name												
Semivolatile Organic Compounds (NG/L)												
Perfluorobutanesulfonic acid (PFBS)	--	40,000	39.9	32.0	22.5	31.9	34.4	4.36 J	3.89	9.93 U	10 U	2.02 U
Perfluorooctane Sulfonate (PFOS)	70	--	9.59 U	1.76 J	9.78 U	1.71 J	1.70 J	10.1 U	2 U	9.93 U	10 U	2.02 U
Perfluorooctanoic acid (PFOA)	70	--	352	324	150 J	193	221	10.1 U	2 U	9.93 U	10 U	2.02 U
PFOA + PFOS	70	--	352	326	150	195	223	ND	ND	ND	ND	ND

Notes:

Shading indicates detections

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U - The material was analyzed for, but not detected

NG/L - Nanograms per liter

ND - Not detected

HQ - Hazard quotient

-- - Results pending

Table 6. Detections of PFAS in Drinking Water

Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water
Area 6

Station ID	USEPA Lifetime Health Advisory (May 2016)	USEPA RSL HQ = 0.1 (May 2018)	WI-CV-1RW20			WI-CV-1RW21		WI-CV-1RW22		WI-CV-1RW23			WI-CV-1RW24
Sample ID			WI-CV-1RW20-1119	WI-CV-1RW21-1119	WI-CV-1RW21P-1119	WI-CV-1RW22-1019	WI-CV-1RW22-0520	WI-CV-1RW23-1019	WI-CV-1RW23P-1019	WI-CV-1RW23-0520	WI-CV-1RW24-1019		
Sample Date			11/08/19	11/01/19	11/01/19	10/31/19	05/18/20	10/31/19	10/31/19	05/20/20	10/31/19		
Chemical Name													
Semivolatile Organic Compounds (NG/L)													
Perfluorobutanesulfonic acid (PFBS)	--	40,000	10 U	10.4 U	10.3 U	10.1 U	2 U	17.5	17.2	18.7	9.81 U		
Perfluorooctane Sulfonate (PFOS)	70	--	10 U	10.4 U	10.3 U	10.1 U	2 U	9.92 U	9.96 U	1.44 J	9.81 U		
Perfluorooctanoic acid (PFOA)	70	--	10 U	10.4 U	10.3 U	10.1 U	2 U	62.5	63.5	58.7	9.81 U		
PFOA + PFOS	70	--	ND	ND	ND	ND	ND	62.5	63.5	60.1	ND		

Notes:

Shading indicates detections

Bold indicates detection above lifetime health advisory

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

NG/L - Nanograms per liter

ND - Not detected

HQ - Hazard quotient

-- - Results pending

Table 6. Detections of PFAS in Drinking Water

Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water
Area 6

Station ID	USEPA Lifetime Health Advisory (May 2016)	USEPA RSL HQ = 0.1 (May 2018)	WI-CV-1RW25		WI-CV-1RW26			WI-CV-1RW27		WI-CV-1RW34		WI-CV-1RW37
			WI-CV-1RW25-1019 10/31/19	WI-CV-1RW25-0520 05/20/20	WI-CV-1RW26-1019 10/31/19	WI-CV-1RW26-0520 05/20/20	WI-CV-1RW26P-0520 05/20/20	WI-CV-1RW27-1019 10/31/19	WI-CV-1RW27-1019 05/20/20	WI-CV-1RW34-1019 10/30/19	WI-CV-1RW34-0520 05/22/20	WI-CV-1RW37-0520 05/18/20
Chemical Name												
Semivolatile Organic Compounds (NG/L)												
Perfluorobutanesulfonic acid (PFBS)	--	40,000	10.2 U	2.07 U	10.1 U	2.02 U	2.02 U	9.88 U	2.06 U	73.1	109	2.03 U
Perfluorooctane Sulfonate (PFOS)	70	--	10.2 U	2.07 U	10.1 U	2.02 U	2.02 U	9.88 U	2.06 U	10.5 U	1.95 U	2.03 U
Perfluorooctanoic acid (PFOA)	70	--	10.2 U	2.07 U	10.1 U	2.02 U	2.02 U	9.88 U	2.06 U	361	409	2.03 U
PFOA + PFOS	70	--	ND	ND	ND	ND	ND	ND	ND	361	409	ND

Notes:

Shading indicates detections

Bold indicates detection above lifetime health advisory

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

NG/L - Nanograms per liter

ND - Not detected

HQ - Hazard quotient

-- - Results pending

Table 6. Detections of PFAS in Drinking Water

Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water
Area 6

Station ID	USEPA Lifetime Health Advisory (May 2016)	USEPA RSL HQ = 0.1 (May 2018)	WI-CV-1RW40			WI-CV-1RW67	WI-CV-1RW72		WI-CV-1RW90		
			WI-CV-1RW40-1119 11/01/19	WI-CV-1RW40P-1119 11/01/19	WI-CV-1RW40-0520 05/22/20	WI-CV-1RW67-1119 11/08/19	WI-CV-1RW72-1019 10/29/19	WI-CV-1RW72-0520 05/27/20	WI-CV-1RW90-1119 11/20/19	WI-CV-1RW90-0520 05/18/20	WI-CV-1RW90P-0520 05/18/20
Chemical Name											
Semivolatile Organic Compounds (NG/L)											
Perfluorobutanesulfonic acid (PFBS)	--	40,000	10 U	9.97 U	2.07 U	9.87 U	1.91 J	1.43 J	34.9	45.7	42.4
Perfluorooctane Sulfonate (PFOS)	70	--	10 U	9.97 U	2.07 U	9.87 U	9.98 U	2 U	9.01 J	10.5	10.2
Perfluorooctanoic acid (PFOA)	70	--	10 U	9.97 U	2.07 U	9.87 U	9.98 U	1.26 J	176	173	164
PFOA + PFOS	70	--	ND	ND	ND	ND	ND	1.26	185	184	174

Notes:

Shading indicates detections

Bold indicates detection above lifetime health advisory

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U - The material was analyzed for, but not detected

NG/L - Nanograms per liter

ND - Not detected

HQ - Hazard quotient

-- - Results pending

Table 6. Detections of PFAS in Drinking Water

Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water
Area 6

Station ID	USEPA Lifetime Health Advisory (May 2016)	USEPA RSL HQ = 0.1 (May 2018)	WI-CV-2RW02		WI-CV-2RW04		WI-CV-2RW06		WI-CV-3RW07		WI-CV-3RW10	
Sample ID			WI-CV-2RW02-1019	WI-CV-2RW02-0520	WI-CV-2RW04-1019	WI-CV-2RW04-0520	WI-CV-2RW06-1019	WI-CV-2RW06-0520	WI-CV-3RW07-1019	WI-CV-3RW07-0520	WI-CV-3RW10-1019	WI-CV-3RW10-0520
Sample Date			10/30/19	05/22/20	10/31/19	05/18/20	10/30/19	05/18/20	10/30/19	05/26/20	10/30/19	05/18/20
Chemical Name												
Semivolatile Organic Compounds (NG/L)												
Perfluorobutanesulfonic acid (PFBS)	--	40,000	18.8	18.1	19.4	12.8	28.0	24.2	10.5 U	2.06 U	167	203
Perfluorooctane Sulfonate (PFOS)	70	--	9.74 U	2 U	13.4	13.2	10.2 U	2.04 U	10.5 U	2.50	10.4 U	2.15
Perfluorooctanoic acid (PFOA)	70	--	212	231	9.19 J	3.99	165	153	10.5 U	2.15	77.7	95.7
PFOA + PFOS	70	--	212	231	22.6	17.2	165	153	ND	4.65	77.7	97.9

Notes:

Shading indicates detections

Bold indicates detection above lifetime health advisory

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

NG/L - Nanograms per liter

ND - Not detected

HQ - Hazard quotient

-- - Results pending

Table 6. Detections of PFAS in Drinking Water

Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water
Area 6

Station ID	USEPA Lifetime Health Advisory (May 2016)	USEPA RSL HQ = 0.1 (May 2018)	WI-CV-3RW11			WI-CV-3RW17		WI-CV-3RW18			WI-CV-1RW92
			WI-CV-3RW11-1019 10/30/19	WI-CV-3RW11-0520 05/20/20	WI-CV-3RW11P-0520 05/20/20	WI-CV-3RW17-1119 11/01/19	WI-CV-3RW17-0520 05/20/20	WI-CV-3RW18-1119 11/08/19	WI-CV-3RW18P-1119 11/08/19	WI-CV-3RW18-0520 05/20/20	WI-CV-1RW92-0720 07/31/20
Chemical Name											
Semivolatile Organic Compounds (NG/L)											
Perfluorobutanesulfonic acid (PFBS)	--	40,000	46.7	42.8	42.8	10.6 U	2 U	10.1 U	10.2 U	2.01 U	2.03 U
Perfluorooctane Sulfonate (PFOS)	70	--	10.3 U	1.49 J	1.49 J	10.6 U	2 U	10.1 U	10.2 U	2.01 U	2.03 U
Perfluorooctanoic acid (PFOA)	70	--	425	295	296	10.6 U	2 U	10.1 U	10.2 U	2.01 U	2.03 U
PFOA + PFOS	70	--	425	296	297	ND	ND	ND	ND	ND	ND

Notes:

Shading indicates detections

Bold indicates detection above lifetime health advisory

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

NG/L - Nanograms per liter

ND - Not detected

HQ - Hazard quotient

-- - Results pending

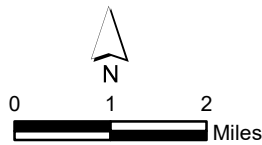
Figures



Legend

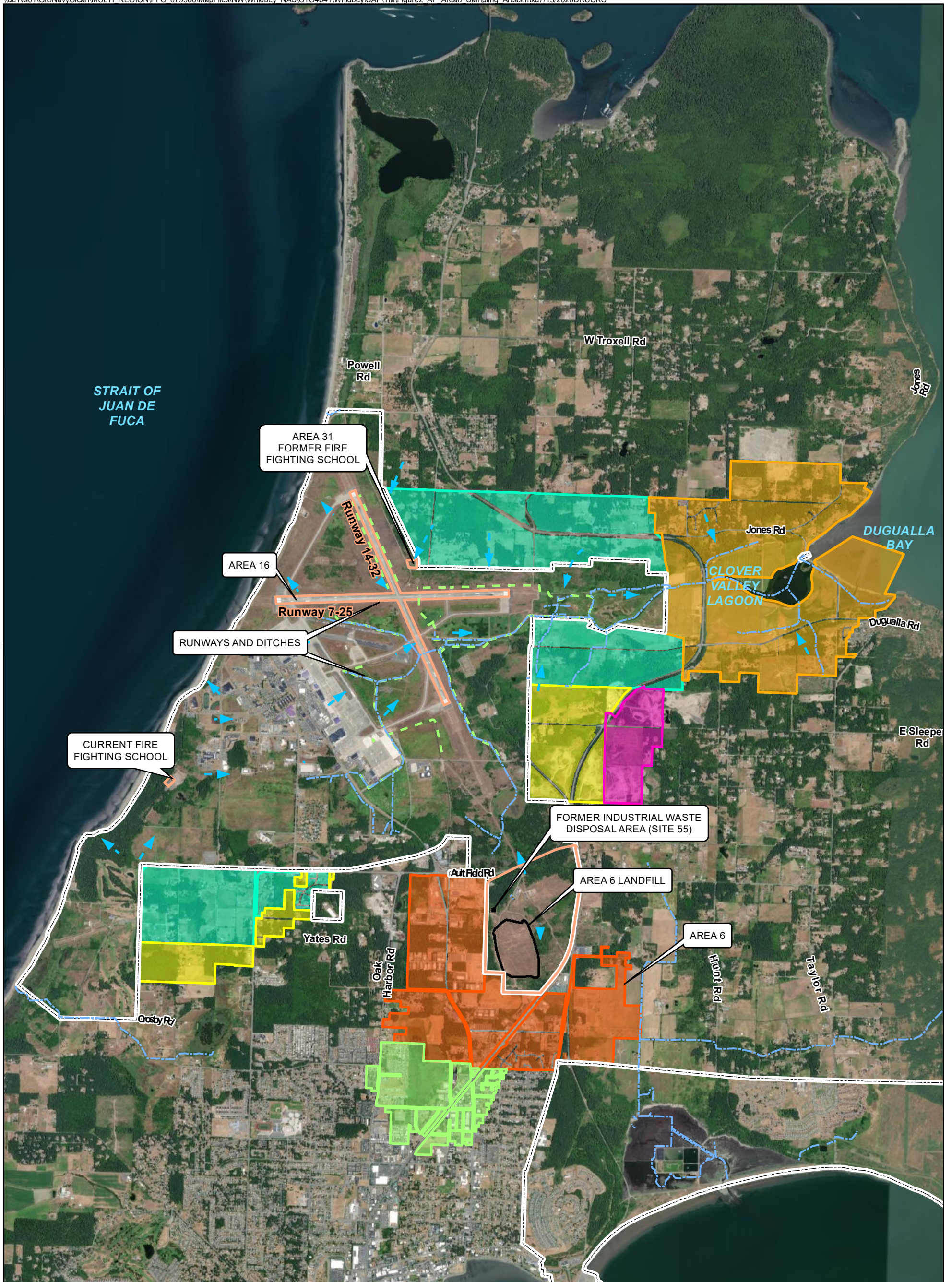
- City
- Secondary Road
- Local Connecting Road
- Important Local Road
- Base Boundary

NAS - Naval Air Station
OLF - Outlying Landing Field



1 inch = 2 miles
Imagery Source: Esri

Figure 1
Installation Location Map
NAS Whidbey Island
Drinking Water Technical Memorandum



- Legend**
- Site Boundary (suspected source)
 - Base Boundary
 - Drainage Ditch (Part of Area 16)
 - Surface Water
 - ➔ Estimated Groundwater Flow Direction
 - Phase 1 Step-Out
 - Phase 2 Step-Out
 - Phase 3 Step-Out
 - Phase 4 Step-Out
 - Area 6 Phase 1 Sampling Area
 - Area 6 Phase 2 Sampling Area

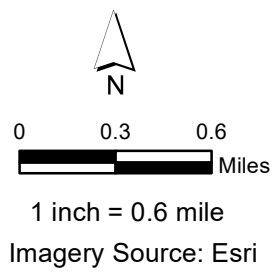
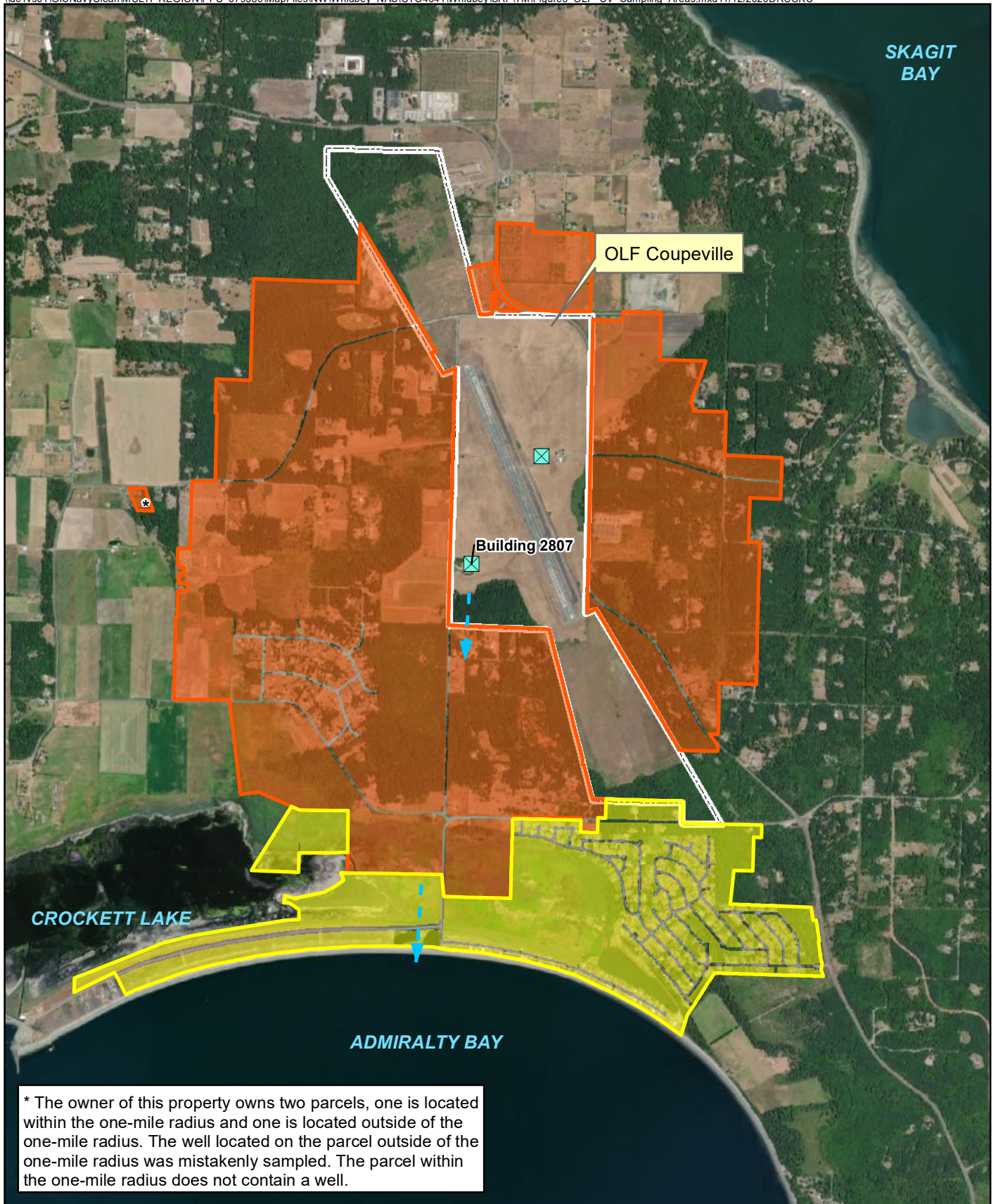







Figure 2
Ault Field and Area 6 Sampling Areas
NAS Whidbey Island
Drinking Water Technical Memorandum



* The owner of this property owns two parcels, one is located within the one-mile radius and one is located outside of the one-mile radius. The well located on the parcel outside of the one-mile radius was mistakenly sampled. The parcel within the one-mile radius does not contain a well.

Legend

-  OLF Coupeville Supply Well
-  Estimated Groundwater Flow Direction
-  Phase 1 Step-Out
-  Phase 2 - Step-Out
-  Base Boundary

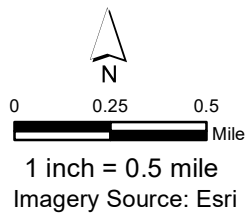


Figure 3
OLF Coupeville Sampling Areas
NAS Whidbey Island
Drinking Water Technical Memorandum

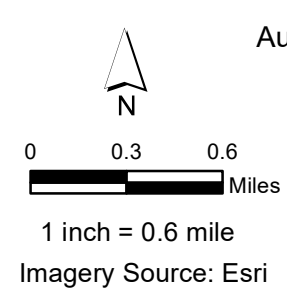
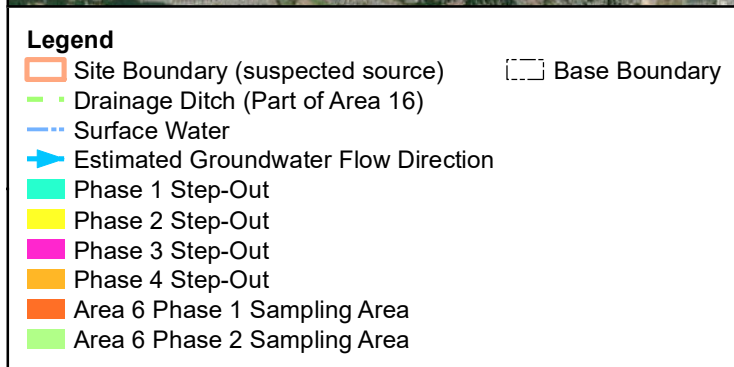
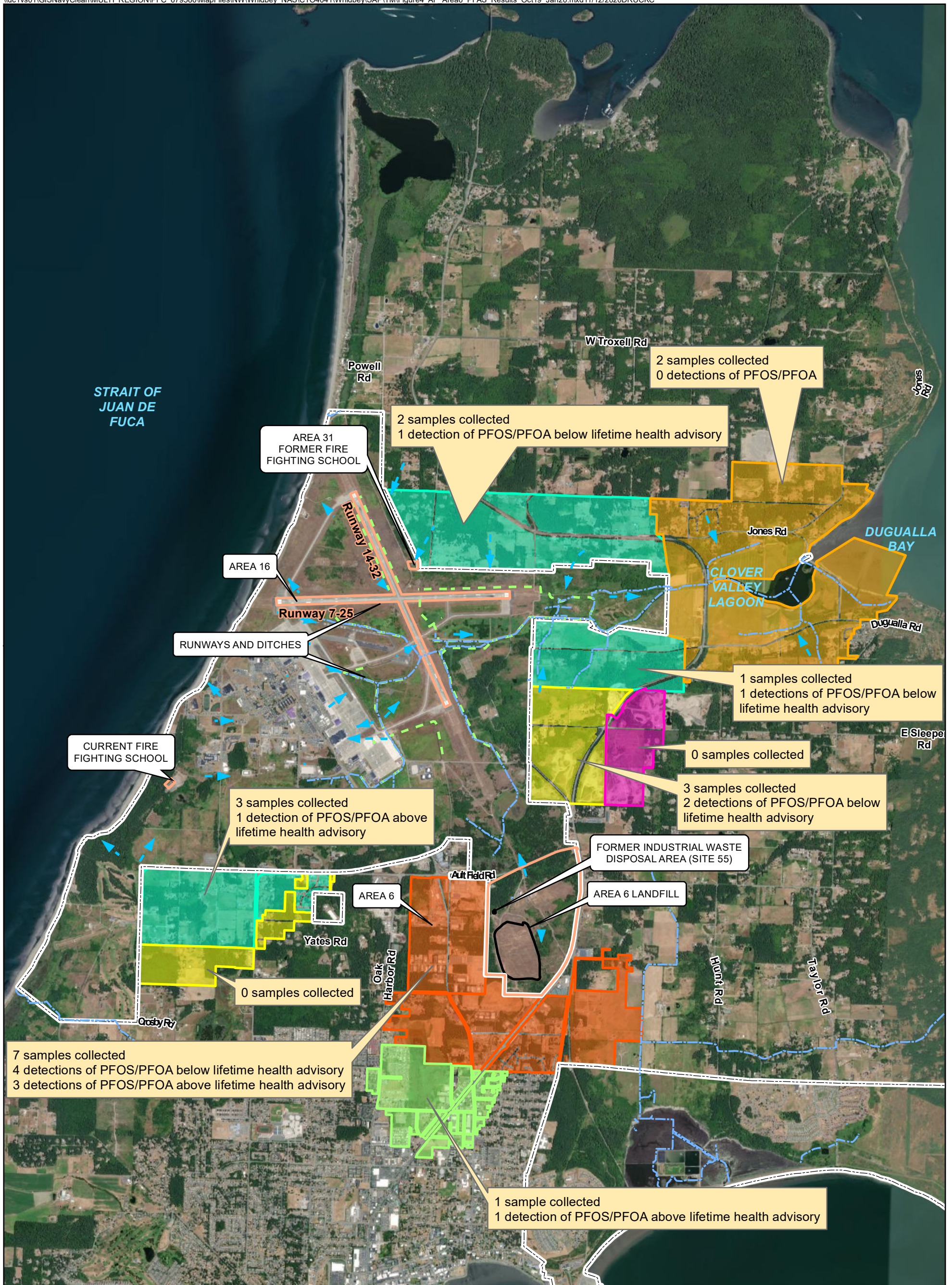
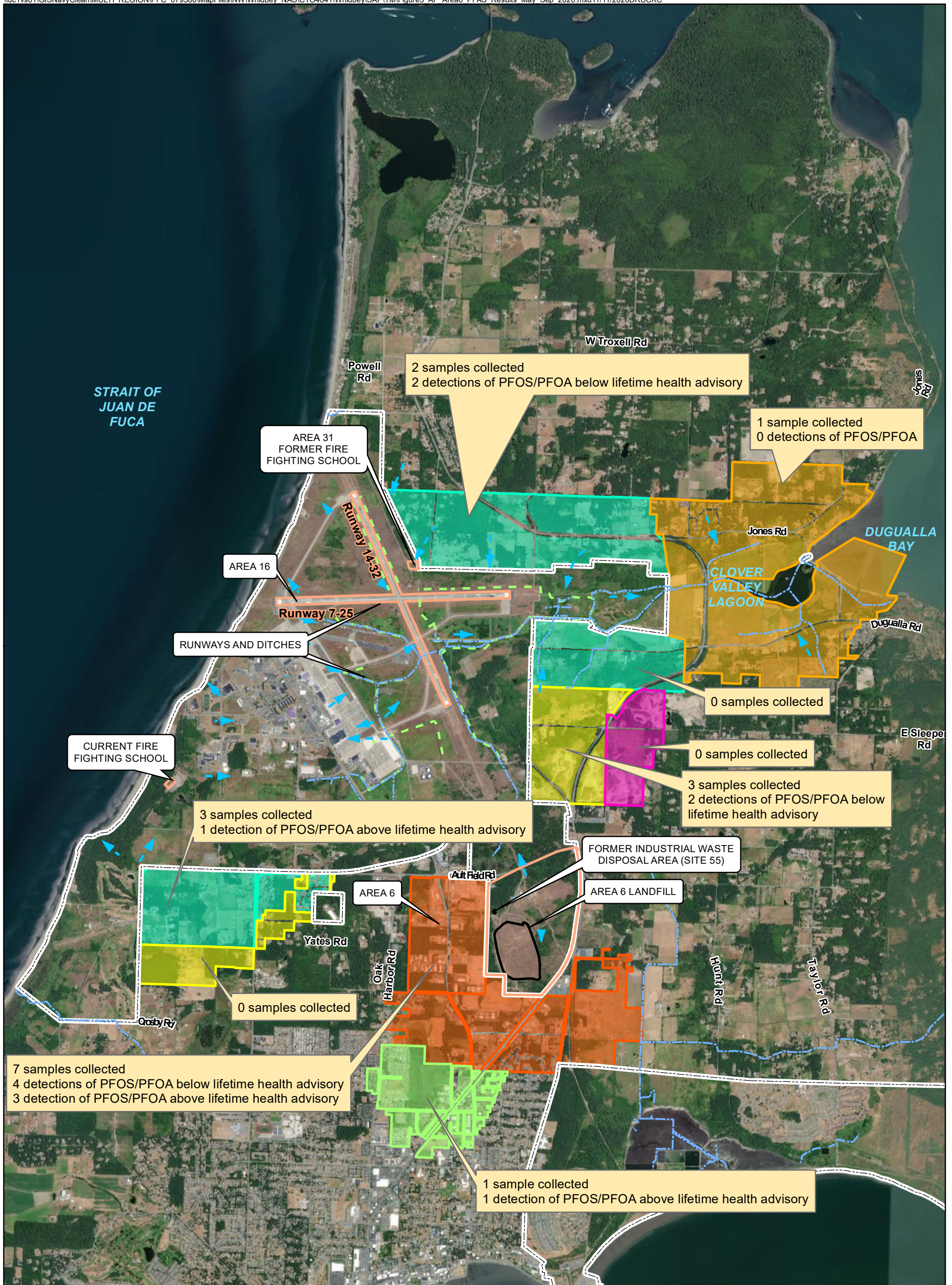


Figure 4
Ault Field and Area 6 October 2019 - January 2020 PFAS Results
NAS Whidbey Island
Drinking Water Technical Memorandum



- Legend**
- Site Boundary (suspected source)
 - Drainage Ditch (Part of Area 16)
 - Surface Water
 - Estimated Groundwater Flow Direction
 - Phase 1 Step-Out
 - Phase 2 Step-Out
 - Phase 3 Step-Out
 - Phase 4 Step-Out
 - Area 6 Phase 1 Sampling Area
 - Area 6 Phase 2 Sampling Area
 - Base Boundary

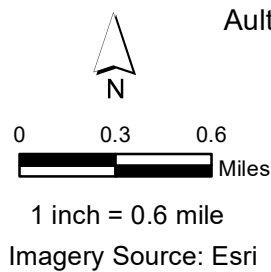
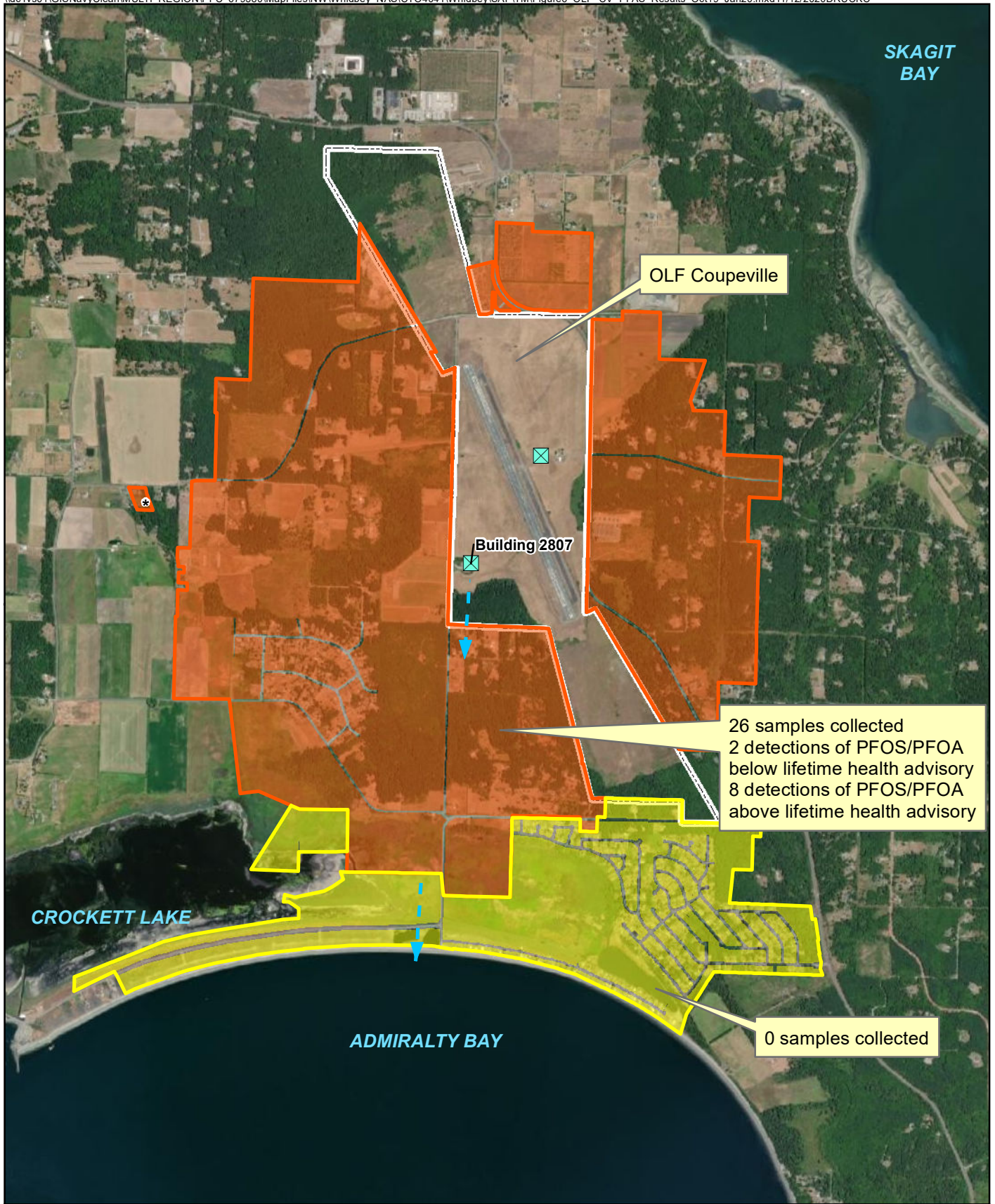


Figure 5
Ault Field and Area 6 May - September 2020 PFAS Results
NAS Whidbey Island
Drinking Water Technical Memorandum



Legend

- OLF Coupeville Supply Well
- Estimated Groundwater Flow Direction
- Phase 1 Step-Out
- Phase 2 - Step-Out
- Base Boundary

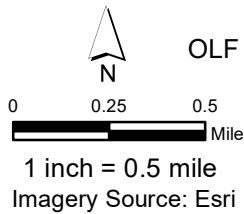
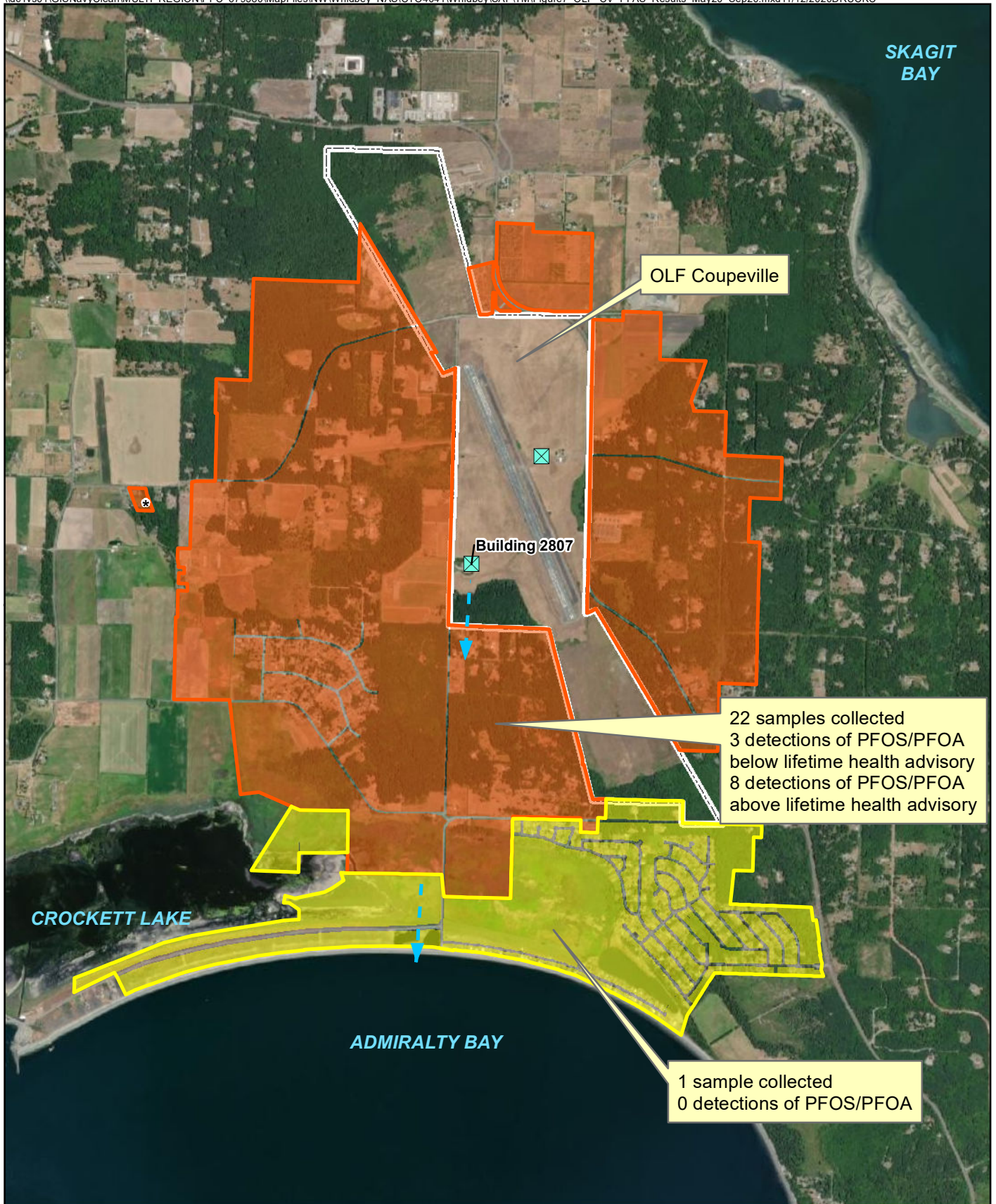







Figure 6
 OLF Coupeville October 2019 - January 2020 PFAS Results
 NAS Whidbey Island
 Drinking Water Technical Memorandum



Legend

-  OLF Coupeville Supply Well
-  Estimated Groundwater Flow Direction
-  Phase 1 Step-Out
-  Phase 2 - Step-Out
-  Base Boundary

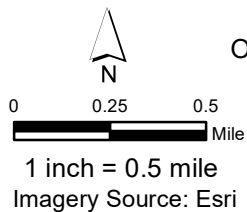


Figure 7
 OLF Coupeville May - September 2020 PFAS Results
 NAS Whidbey Island
 Drinking Water Technical Memorandum

Attachment 1
Chains-of-Custody



A Waters Company

ERA, A Waters Company
Sample Identification and Chain of Custody Form

Ship to: Candlewood Suites Oak Harbor Guest: Gerrit Gardner 33211 SR 20 Oak Harbor, WA 98277 Phone: (757) 671-6218 Fax: Attention: Gerrit Gardner	Ship from: ERA 16341 Table Mountain Parkway Golden, CO 80403 Phone: 800-372-0122 or 303-431-8454 Fax: 303-421-0159 Contact: Brent Polizzi
---	--

Sample Description	Sample Identification	Sample Date	Sample Type	# of Containers	Preservative
PFAS	05042001.1	19-May-2020	Aqueous	2 x 250mL	Trizma
PFAS Blank	05042001.2	19-May-2020	Aqueous	2 x 250mL	Trizma

		Condition of Contents
Relinquished by: <i>Pat Davis</i>	Date/Time: <i>MAY 19 2020 15:00</i>	
Received by: <i>Gerrit Gardner</i>	Date/Time: <i>5/20/2020 18:00</i>	
Relinquished by:	Date/Time:	
Received by:	Date/Time:	
Relinquished by:	Date/Time:	
Received by:	Date/Time:	



CHAIN OF CUSTODY

For Laboratory Use Only

Work Order #: _____ Temp: _____ °C
 Storage ID: _____ Storage Secured: Yes No

Project ID: NASWI Off-Base Drinking Water Sampling PO#: 148010215 Sampler: G. Gardner, A. Vogt
 (name)

TAT Standard: 21 days
 (check one): 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
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

SHIP TO: Vista Analytical Laboratory 1104 Windfield Way El Dorado Hills, CA 95762 (916) 673-1520 * Fax (916) 673-0106	Method of Shipment: <u>FedEx</u>	Add Analysis(es) Requested
ATTN: <u>Martha Maier</u>	Tracking No.: _____	Container(s)

Sample ID	Date	Time	Location/ Sample Description	Add Analysis(es) Requested											Comments				
				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	PFOA/ PFOS	UCMR3 PFAS List:6	537.1 List of 14		537.1 List of 18			
WI-A06-RW20-0920	9/3/20	14:10	water spigot	2	PY	DW												X	
WI-A06-RW20P-0920	9/3/20	14:15	water spigot	2	PY	DW												X	
WI-A06-FB20-0920	9/3/20	14:10	water spigot	2	PY	DW												X	

Special Instructions/Comments: _____

SEND DOCUMENTATION AND RESULTS TO:

Name: Travis Pitts
 Company: CH2M Hill (Jacobs)
 Address: _____
 City: _____
 Phone: 541 768 3727
 Email: travis.pitts@jacobs.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: _____



CHAIN OF CUSTODY

For Laboratory Use Only
 Work Order #: _____ Temp: _____ °C
 Storage ID: _____ Storage Secured: Yes No

Project ID: 9000NVT3 PO#: 148010215 Sampler: G. Gardner, A. Vogt
 (name)

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

Gerit Gardner *Gerit Gardner* 8/3/2020 09:30

Relinquished by (printed name and signature) _____ Date _____ Time _____ Received by (printed name and signature) _____ Date _____ Time _____

Relinquished by (printed name and signature) _____ Date _____ Time _____ Received by (printed name and signature) _____ Date _____ Time _____

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

Method of Shipment: FedEx
 Tracking No.: _____

Quantity	Type	Matrix	Add Analysis(es) Requested										Comments
			Container(s)	PFAS by Isotope Dilution	EPA Method 537 (DW only)	PFON/PFOS	UCMR3 PFAS List 8	537.1 List: 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: Please attach analyze list	PFON/PFOS	UCMR3 PFAS List 8	

Sample ID	Date	Time	Location/ Sample Description	Quantity	Type	Matrix	PFON/PFOS	UCMR3 PFAS List 8	537.1 List: 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: Please attach analyze list	PFON/PFOS	UCMR3 PFAS List 8	537.1 List of 14	537.1 List of 18	Comments	
WI-CV-1RW92-0720	7/31/2020	11:10	Drinking Water	2	PP	DW										X	
WI-CV-1RW92-0720-MS	7/31/2020	11:10	Drinking Water	2	PP	DW										X	
WI-CV-1RW92-0720-MSD	7/31/2020	11:10	Drinking Water	2	PP	DW										X	
WI-CV-1FB92-0720	7/31/2020	11:10	Drinking Water	2	PP	DW										X	

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:
 Name: Ginger Collins
 Company: CH2M Hill (Jacobs)
 Address: _____
 City: _____
 Phone: 541-768-3615
 Email: ginger.collins@jacobs.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: _____



CHAIN OF CUSTODY

For Laboratory Use Only

Work Order #: _____ Temp: _____ °C

Storage ID: _____ Storage Secured: Yes No

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

Project ID: 9000NVT3 PO#: 148010215 Sampler: G. Gardner, A. Vogt
 (name)

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
<i>Gerrit Gardner</i>	<u>5/21/2020</u>	<u>12:00</u>	<i>Henrik Hansen</i>		
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

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

Method of Shipment: FedEx

ATTN: Martha Maier

Tracking No.: _____

Add Analysis(es) Requested

Containers(s) _____

PFAS by Isotope Dilution _____

EPA Method 537 (DW only) _____

PFAS List: 14 or 18 (Circle One) _____

PFAS List: 14 or 18 (Circle One) _____

OTHER: Please attach analyte list _____

Sample ID	Date	Time	Location/ Sample Description	Quantity	Type	Matrix	PFAS List: 14 or 18 (Circle One)	PFAS List: 14 or 18 (Circle One)	PFAS List: 14 or 18 (Circle One)	PFAS List: 14 or 18 (Circle One)	Comments
WI-CV-2RW04-0520	5/18/2020	15:10	Drinking Water	2	PP	DW					X
WI-CV-2FB04-0520	5/18/2020	15:10	Drinking Water	2	PP	DW					X
WI-CV-1RW90-0520	5/18/2020	14:15	Drinking Water	2	PP	DW					X
WI-CV-1RW90P-0520	5/18/2020	14:20	Drinking Water	2	PP	DW					X
WI-CV-1FB90-0520	5/18/2020	14:15	Drinking Water	2	PP	DW					X
WI-CV-1RW22-0520	5/18/2020	16:10	Drinking Water	2	PP	DW					X
WI-CV-1FB22-0520	5/18/2020	16:10	Drinking Water	2	PP	DW					X
WI-CV-3RW11-0520	5/18/2020	13:10	Drinking Water	2	PP	DW					DISPOSE - DO NOT ANALYZE
WI-CV-3RW11P-0520	5/18/2020	13:15	Drinking Water	2	PP	DW					DISPOSE - DO NOT ANALYZE
WI-CV-3FB11-0520	5/18/2020	13:10	Drinking Water	2	PP	DW					DISPOSE - DO NOT ANALYZE

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:

Name: Ginger Collins

Company: CH2M Hill (Jacobs)

Address: _____

City: _____

Phone: 541-768-3615

Email: ginger.collins@jacobs.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: _____



CHAIN OF CUSTODY

For Laboratory Use Only
 Work Order #: _____ Temp: _____ °C
 Storage ID: _____ Storage Secured: Yes No

Project ID: 9000NVT3 PO#: 148010215 Sampler: G. Gardner, A. Vogt
 (name)

TAT Standard: 21 days
 (check one): 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 _____
Gersit Gardner Herold 5/21/2020 12:00

Sample ID	Date	Time	Location/ Sample Description	Add Analysis(es) Requested										Comments				
				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	PFOA/PFOS	UCMR3 PFAS Lists		537:1 List of 14	537:1 List of 18		
WI-CV-3RW10-0520	5/18/2020	10:05	Drinking Water	2	PP	DW												X
WI-CV-3FB10-0520	5/18/2020	10:05	Drinking Water	2	PP	DW												X
WI-CV-1RW37-0520	5/18/2020	17:20	Drinking Water	2	PP	DW												X
WI-CV-1FB37-0520	5/18/2020	17:20	Drinking Water	2	PP	DW												X
WI-CV-2RW06-0520	5/18/2020	11:20	Drinking Water	2	PP	DW												X
WI-CV-2FB06-0520	5/18/2020	11:20	Drinking Water	2	PP	DW												X

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:

Name: Ginger Collins
 Company: CH2M Hill (Jacobs)
 Address: _____
 City: _____
 Phone: 541-768-3615
 Email: ginger.collins@jacobs.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: _____



CHAIN OF CUSTODY

For Laboratory Use Only
 Work Order #: _____ Temp: _____ °C
 Storage ID: _____ Storage Secured: Yes No

Project ID: 9000NVT3 PO#: 148010215 Sampler: G. Gardner, A. Vogt
 (name)

TAT Standard: 21 days
 (check one): 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 _____
Cerrit Gardner *Henrik Gardner* 5/21/2020 1200
 Relinquished by (printed name and signature) _____ Date _____ Time _____ Received by (printed name and signature) _____ Date _____ Time _____

SHIP TO: Vista Analytical Laboratory
 1104 Windfield Way
 El Dorado Hills, CA 95762
 (916) 673-1520 * Fax (916) 673-0106
 ATTN: Martha Maier
 Method of Shipment: FedEx
 Tracking No.: _____
 Add Analysis(es) Requested
 Container(s) _____
 PFAS by Isotope Dilution
 EPA Method 537 (DW only)
 OTHER: Please attach analyte list

Sample ID	Date	Time	Location/ Sample Description	Quantity	Type	Matrix	PFOW/PFOA	UCMR3 PFAS List 6	537.1 List: 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: Please attach analyte list	PFOW/PFOA	UCMR3 PFAS List: 6	537.1 List of 14	537.1 List of 18	Comments	
WI-AF-1RW01-0520	5/19/2020	13:10	Drinking Water	2	PP	DW										X	
WI-AF-1FB01-0520	5/19/2020	13:10	Drinking Water	2	PP	DW										X	
WI-A06-RW05-0520	5/19/2020	15:05	Drinking Water	2	PP	DW										X	
WI-A06-RW05-0520-MS	5/19/2020	15:05	Drinking Water	2	PP	DW										X	
A06-RW05-0520-MSD	5/19/2020	15:05	Drinking Water	2	PP	DW										X	
WI-A06-FB05-0520	5/19/2020	15:05	Drinking Water	2	PP	DW										X	
WI-AF-1RW32-0520	5/19/2020	08:55	Drinking Water	2	PP	DW										X	
WI-AF-1FB32-0520	5/19/2020	08:55	Drinking Water	2	PP	DW										X	
WI-A06-RW03-0520	5/19/2020	16:10	Drinking Water	2	PP	DW										X	
WI-A06-RW03P-0520	5/19/2020	16:15	Drinking Water	2	PP	DW										X	

Special Instructions/Comments: _____
 Name: Ginger Collins
 Company: CH2M Hill (Jacobs)
 Address: _____
 City: _____
 Phone: 541-768-3615
 Email: ginger.collins@jacobs.com

SEND DOCUMENTATION AND RESULTS TO:

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: _____



CHAIN OF CUSTODY

For Laboratory Use Only
 Work Order #: _____ Temp: _____ °C
 Storage ID: _____ Storage Secured: Yes No

Project ID: 9000NVT3 PO#: 148010215 Sampler: G. Gardner, A. Vogt
 (name)

TAT Standard: 21 days
 (check one): 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 _____
Gerrit Gardner _____ *Gardner* 5/24/2020 12:00
 Relinquished by (printed name and signature) _____ Date _____ Time _____ Received by (printed name and signature) _____ Date _____ Time _____

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

Method of Shipment: FedEx
 Tracking No.: _____

Add Analysis(es) Requested		PFAS by Isotope Dilution		EPA Method 537 (DW only)	
Container(s)		PFAS by Isotope Dilution		EPA Method 537 (DW only)	
Quantity	Type	Matrix	PFAS/ PFOS	UCMR3 PFAS List 6	537.1 List 14 or 18 (Circle One)
			OTHER: _____	PFAS/ PFOS	UCMR3 PFAS List 6
			537.1 List of 14	537.1 List of 14	537.1 List of 18
			EPA Draft List of 24		
			OTHER: _____		
			Please attach analyte list		

Sample ID	Date	Time	Location/ Sample Description	Quantity	Type	Matrix	PFAS/ PFOS	UCMR3 PFAS List 6	537.1 List 14 or 18 (Circle One)	OTHER: _____	PFAS/ PFOS	UCMR3 PFAS List 6	537.1 List of 14	537.1 List of 18	Comments
WI-CV-1RW27-0520	5/20/2020	09:10	Drinking Water	2	PP	DW								X	
WI-CV-1FB27-0520	5/20/2020	09:10	Drinking Water	2	PP	DW								X	
WI-CV-1RW25-0520	5/20/2020	09:35	Drinking Water	2	PP	DW								X	
WI-CV-1FB25-0520	5/20/2020	09:35	Drinking Water	2	PP	DW								X	
WI-CV-1RW26-0520	5/20/2020	09:50	Drinking Water	2	PP	DW								X	
WI-CV-1RW26P-0520	5/20/2020	10:00	Drinking Water	2	PP	DW								X	
WI-CV-1FB26-0520	5/20/2020	09:50	Drinking Water	2	PP	DW								X	
WI-CV-1RW23-0520	5/20/2020	10:10	Drinking Water	2	PP	DW								X	
WI-CV-1FB23-0520	5/20/2020	10:10	Drinking Water	2	PP	DW								X	
WI-CV-3RW18-0520	5/20/2020	10:55	Drinking Water	2	PP	DW								X	

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:

Name: Ginger Collins
 Company: CH2M Hill (Jacobs)
 Address: _____
 City: _____
 Phone: 541-768-3615
 Email: ginger.collins@jacobs.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: _____



CHAIN OF CUSTODY

For Laboratory Use Only
 Work Order # _____ Temp: _____ °C
 Storage ID: _____ Storage Secured: Yes No

Project ID: 9000NVT3 PO#: 148010215 Sampler: G. Gardner, A. Vogt
 (name)

TAT Standard: 21 days
 (check one): 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 _____
Cecilia Gardner *5/21/2020* *12:00*

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

Method of Shipment: FedEx
 Tracking No.: _____

Add Analysis(es) Requested

Container(s)	PFAS by Isotope Dilution	EPA Method 537 (DW only)
Quantity	PFAS by Isotope Dilution	EPA Method 537 (DW only)
Type	PFAS by Isotope Dilution	EPA Method 537 (DW only)
Matrix	PFAS by Isotope Dilution	EPA Method 537 (DW only)
PFOM/PPOS	PFAS by Isotope Dilution	EPA Method 537 (DW only)
UCMR3 PFAS List 6	PFAS by Isotope Dilution	EPA Method 537 (DW only)
537.1 List 1A or 1B (Circle One)	PFAS by Isotope Dilution	EPA Method 537 (DW only)
EPA Draft List of 24	PFAS by Isotope Dilution	EPA Method 537 (DW only)
OTHER: Please attach analyze list	PFAS by Isotope Dilution	EPA Method 537 (DW only)
	PFOM/PPOS	UCMR3 PFAS List 6
	537.1 List of 1A	537.1 List of 1B

Sample ID	Date	Time	Location/ Sample Description	Quantity	Type	Matrix	PFOM/PPOS	UCMR3 PFAS List 6	537.1 List 1A or 1B (Circle One)	EPA Draft List of 24	OTHER: Please attach analyze list	PFOM/PPOS	UCMR3 PFAS List 6	537.1 List of 1A	537.1 List of 1B	Comments
WI-CV-3FB18-0520	5/20/2020	10:55	Drinking Water	2	PP	DW										X
WI-CV-3RW11-0520	5/20/2020	11:40	Drinking Water	2	PP	DW										X
WI-CV-3RW11P-0520	5/20/2020	11:50	Drinking Water	2	PP	DW										X
WI-CV-3FB11-0520	5/20/2020	11:40	Drinking Water	2	PP	DW										X
WI-AF-1RW28-0520	5/20/2020	14:50	Drinking Water	2	PP	DW										X
WI-AF-1RW28-0520-MS	5/20/2020	14:50	Drinking Water	2	PP	DW										X
WI-AF-1RW28-0520-MSD	5/20/2020	14:50	Drinking Water	2	PP	DW										X
WI-AF-1FB28-0520	5/20/2020	14:50	Drinking Water	2	PP	DW										X

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:

Name: Ginger Collins
 Company: CH2M Hill (Jacobs)
 Address: _____
 City: _____
 Phone: 541-768-3615
 Email: ginger.collins@jacobs.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: _____



CHAIN OF CUSTODY

For Laboratory Use Only
 Work Order #: _____ Temp: _____ °C
 Storage ID: _____ Storage Secured: Yes No

Project ID: 9000NVT3 PO#: 148010215 Sampler: G. Gardner, A. Vogt
 (name)

TAT Standard: 21 days
 (check one): 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
<i>Gerrit Goveker</i>	<u>5/21/2020</u>	<u>12:00</u>	<i>Gerrit Goveker</i>		

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

Method of Shipment: FedEx
 Tracking No.: _____

Sample ID	Date	Time	Location/ Sample Description	Quantity		Matrix	Add Analysis(es) Requested				OTHER: Please attach analyte list	PFAS by Isotope Dilution				Comments	
				Type	Matrix		PFOA/PFOS	UCMRS PFAS List 6	537.1 List: 14 or 18 (Circle One)	EPA Draft List of 34		PFOA/PFOS	UCMRS PFAS List 6	537.1 List of 14	537.1 List of 18		EPA Method 537 (DW only)
WI-A06-RW04-0520	5/19/2020	16:25	Drinking Water	2	PP	DW										X	
WI-A06-FB04-0520	5/19/2020	16:25	Drinking Water	2	PP	DW										X	
WI-AF-3RW41-0520	5/19/2020	17:00	Drinking Water	2	PP	DW										X	
WI-AF-3RW41P-0520	5/19/2020	17:05	Drinking Water	2	PP	DW										X	
WI-AF-3FB41-0520	5/19/2020	17:00	Drinking Water	2	PP	DW										X	
WI-CV-1RW01PP-0520	5/20/2020	17:00	Drinking Water	2	PP	DW										X	
WI-CV-1FB01PP-0520	5/20/2020	17:00	Drinking Water	2	PP	DW										X	
WI-CV-1RW01-0520	5/20/2020	13:55	Drinking Water	2	PP	DW										X	
WI-CV-1FB01-0520	5/20/2020	13:55	Drinking Water	2	PP	DW										X	
WI-CV-3RW17-0520	5/20/2020	13:30	Drinking Water	2	PP	DW										X	

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:

Name: Ginger Collins
 Company: CH2M Hill (Jacobs)
 Address: _____
 City: _____
 Phone: 541-768-3615
 Email: ginger.collins@jacobs.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: _____



CHAIN OF CUSTODY

For Laboratory Use Only
 Work Order #: _____ Temp: _____ °C
 Storage ID: _____ Storage Secured: Yes No

Project ID: 9000NVT3 PO#: 148010215 Sampler: G. Gardner, A. Vogt
 (name)

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

Gerrit Gardner 5/27/2020 12:00
 Relinquished by (printed name and signature) Date Time Received by (printed name and signature) Date Time

Relinquished by (printed name and signature) Date Time Received by (printed name and signature) Date Time

SHIP TO: Vista Analytical Laboratory
 1104 Windfield Way
 El Dorado Hills, CA 95762
 (916) 673-1520 * Fax (916) 673-0106
 ATTN: Martha Maier
 Method of Shipment: FedEx
 Tracking No.: _____

Add Analysis(es) Requested
 Container(s) _____
 PFAS by Isotope Dilution
 EPA Method 537 (DW only)
 OTHER: Please attach analyte list
 PFOM/ PPOS
 UCMR3 PFAS List: 6
 537.1 List: 14 or 16 (Circle One)
 EPA Draft List of 24
 PFOM/ PPOS
 UCMR3 PFAS List: 6
 537.1 List of 14
 537.1 List of 16

Sample ID	Date	Time	Location/ Sample Description	Quantity	Type	Matrix	PFOM/ PPOS	UCMR3 PFAS List: 6	537.1 List: 14 or 16 (Circle One)	EPA Draft List of 24	OTHER: Please attach analyte list	PFOM/ PPOS	UCMR3 PFAS List: 6	537.1 List of 14	537.1 List of 16	Comments
WI-CV-1RW34-0520	5/22/2020	10:10	Drinking Water	2	PP	DW										X
WI-CV-1RW34-0520-MS	5/22/2020	10:10	Drinking Water	2	PP	DW										X
WI-CV-1RW34-0520-MSD	5/22/2020	10:10	Drinking Water	2	PP	DW										X
WI-CV-1FB34-0520	5/22/2020	10:10	Drinking Water	2	PP	DW										X
WI-CV-1RW40-0520	5/22/2020	11:10	Drinking Water	2	PP	DW										X
WI-CV-14040-0520 1FB40	5/22/2020	11:10	Drinking Water	2	PP	DW										X

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:
 Name: Ginger Collins
 Company: CH2M Hill (Jacobs)
 Address: _____
 City: _____
 Phone: 541-768-3615
 Email: ginger.collins@jacobs.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: _____



CHAIN OF CUSTODY

For Laboratory Use Only
 Work Order #: _____ Temp: _____ °C
 Storage ID: _____ Storage Secured: Yes No

Project ID: 9000NVT3 PO#: 148010215 Sampler: G. Gardner, A. Vogt
 (name)

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

<u>Gerrit Gardner A. Vogt</u>	<u>5/27/2020</u>	<u>12:00</u>		
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date Time

SHIP TO: Vista Analytical Laboratory 1104 Windfield Way El Dorado Hills, CA 95762 (916) 673-1520 * Fax (916) 673-0106 ATTN: <u>Martha Maier</u>				Method of Shipment: <u>FedEx</u> Tracking No.: _____		Add Analysis(es) Requested Container(s) _____ PFAS by Isotope Dilution EPA Method 537 (DW only) OTHER: Please attach analyte list PFOA/ PFOS UCMR3 PFAS Lists 537-1 List: 14 or 18 (Circle One) EPA Draft List of 24 PFOA/ PFOS UCMR3 PFAS Lists 537-1 List of 14 537-1 List of 18											
Sample ID	Date	Time	Location/ Sample Description	Quantity	Type	Matrix	PFOA/ PFOS	UCMR3 PFAS Lists	537-1 List: 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: Please attach analyte list	PFOA/ PFOS	UCMR3 PFAS Lists	537-1 List of 14	537-1 List of 18	Comments	
WI-CV-1RW14-0520	5/22/2020	12:50	Drinking Water	2	PP	DW										X	
WI-CV-1FB14-0520	5/22/2020	13:10	Drinking Water	2	PP	DW										X	
WI-A06-RW24-0520	5/26/2020	10:15	Drinking Water	2	PP	DW										X	
WI-A06-FB24-0520	5/26/2020	10:15	Drinking Water	2	PP	DW										X	
WI-A06-RW19-0520	5/26/2020	12:05	Drinking Water	2	PP	DW										X	
WI-A06-FB19-0520	5/26/2020	12:05	Drinking Water	2	PP	DW										X	
WI-CV-3RW07-0520	5/26/2020	13:00	Drinking Water	2	PP	DW										X	
WI-CV-3FB07-0520	5/26/2020	13:00	Drinking Water	2	PP	DW										X	
WI-CV-1RW09-0520	5/22/2020	14:50	Drinking Water	2	PP	DW										X	
WI-CV-1FB09-0520	5/22/2020	14:50	Drinking Water	2	PP	DW										X	

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:
 Name: Ginger Collins
 Company: CH2M Hill (Jacobs)
 Address: _____
 City: _____
 Phone: 541-768-3615
 Email: ginger.collins@jacobs.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: _____



CHAIN OF CUSTODY

For Laboratory Use Only

Work Order #: _____ Temp: _____ °C

Storage ID: _____ Storage Secured: Yes No

Project ID: 9000NVT3 PO#: 148010215 Sampler: G. Gardner, A. Vogt
(name)

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

Gret Gardner A. Vogt 5/27/2020 12:00
Relinquished by (printed name and signature) Date Time Received by (printed name and signature) Date Time

Relinquished by (printed name and signature) Date Time Received by (printed name and signature) Date Time

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

ATTN: Martha Maier

Method of Shipment: FedEx
Tracking No.: _____

Add Analysis(es) Requested

Container(s) _____

PFAS by Isotope Dilution

EPA Method 537 (DW only)

OTHER: Please attach analyte list

PFOM/PFOS UCMR3 PFAS List 8 537.1 List of 14 537.1 List of 18

Sample ID	Date	Time	Location/ Sample Description	Quantity	Type	Matrix	PFOM/PFOS	UCMR3 PFAS List 8	537.1 List of 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: Please attach analyte list	PFOM/PFOS	UCMR3 PFAS List 8	537.1 List of 14	537.1 List of 18	Comments	
WI-CV-1RW72-0520	5/27/2020	09:10	Drinking Water	2	PP	DW										X	
WI-CV-1FB72-0520	5/27/2020	09:10	Drinking Water	2	PP	DW										X	

Special Instructions/Comments: _____

SEND DOCUMENTATION AND RESULTS TO:

Name: Ginger Collins
Company: CH2M Hill (Jacobs)
Address: _____
City: _____
Phone: 541-768-3615
Email: ginger.collins@jacobs.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: _____



CHAIN OF CUSTODY

For Laboratory Use Only
 Work Order #: _____ Temp: _____ °C
 Storage ID: _____ Storage Secured: Yes No

Project ID: 9000NVT3 PO#: 148010215 Sampler: G. Gardner, A. Vogt
 (name)

TAT Standard: 21 days
 (check one): 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
<u>Gerrit Gardner</u>	<u>11/20/2019</u>	<u>13:30</u>			

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

Method of Shipment: FedEx
 Tracking No.: _____

Sample ID	Date	Time	Location/ Sample Description	Add Analysis(es) Requested											Comments										
				Quantity	Type	Matrix	PFON/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	PFON/PFOS	UCMR3 PFAS List:6		537.1 List of 14	537.1 List of 18	EPA Method 537 (DW only)							
WI-CV-1RW90-1119	11/20/19	12:00	DW	2	PY	DW																			
WI-CV-1FB90-1119	11/20/19	11:55	Field Reagent Blank	2	PY	DW																			

Special Instructions/Comments:

**SEND
DOCUMENTATION
AND RESULTS TO:**

Name: Travis Pitts
 Company: Jacobs (CH2M Hill)
 Address: 1100 NE Circle Blvd. Ste. 300
 City: Corvallis State: OR Zip: 97330
 Phone: 541-768-3727 Fax: _____
 Email: travis.pitts@jacobs.com

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



CHAIN OF CUSTODY

For Laboratory Use Only
 Work Order #: _____ Temp: _____ °C
 Storage ID: _____ Storage Secured: Yes No

Project ID: 9000MT3 PO#: 148010215 Sampler: G. Gardner, J. Peery Lennor (name)
 TAT (check one): Standard: 21 days
 14 days 7 days Specify: _____

Relinquished by (printed name and signature) Travis Pitts Jacobs travis.pitts@jacobs.com 541-768-3727 (work) 541-231-1992
 Date _____ Time _____ Received by (printed name and signature) _____ Date _____ Time _____
 Relinquished by (printed name and signature) Gerrit Gardner Herit Anshen 11/11/2019 10:00
 Date _____ Time _____ Received by (printed name and signature) _____ Date _____ Time _____

SHIP TO: Vista Analytical Laboratory
 1104 Windfield Way
 El Dorado Hills, CA 95762
 (916) 673-1520 * Fax (916) 673-0106
 ATTN: Martha Maier
 Method of Shipment: FedEx
 Tracking No.: _____
 Add Analysis(es) Requested: _____
 Container(s): _____
 PFAS by Isotope Dilution: _____
 EPA Method 537 (DW only): _____
 OTHER: Please attach analyte list: _____
 PFOA/PFOs: _____
 UCMR3 PFAS List:5 _____
 S37.1 List: 14 or 18 (Circle One) _____
 EPA Draft List of 24 _____
 PFOA/PFOs _____
 UCMR3 PFAS List:6 _____
 S37.1 List of 14 _____
 S37.1 List of 18 _____

Sample ID	Date	Time	Location/ Sample Description	Quantity	Type	Matrix	PFOA/PFOs	UCMR3 PFAS List:5	S37.1 List: 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: Please attach analyte list	PFOA/PFOs	UCMR3 PFAS List:6	S37.1 List of 14	S37.1 List of 18	Comments
WT-CV-1RW09-1119	11/6/2019	16:35	DW	2	PY	DW										
WT-CV-1FB09-1119		16:35														
WT-CV-1RW10-1119		16:50														
WT-CV-1FB10-1119	✓	16:50														
WT-CV-3RW18-1119	11/8/2019	08:00														
WT-CV-3RW18P-1119		08:15														
WT-CV-3FB18-1119		08:10														
WT-CV-1RW20-1119		09:15														
WT-CV-1FB20-1119		09:15														
WT-CV-1RW67-1119		10:10														
Special Instructions/Comments: WT-CV-1FB67-1119	✓	10:10														

SEND DOCUMENTATION AND RESULTS TO:

Name: Travis Pitts
 Company: Jacobs
 Address: _____
 City: _____
 Phone: _____
 Email: travis.pitts@jacobs.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: _____



CHAIN OF CUSTODY

For Laboratory Use Only
 Work Order #: _____ Temp: _____ °C
 Storage ID: _____ Storage Secured: Yes No

Project ID: 9000013 PO#: 148010215 Sampler: Gerrit Gardner, Jordan Peeg
 (name) Lemon

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

Travis Pitts Jacobs travis.pitts@jacobs.com 541-768-3727 (work) 541-231-1992 (mobile)
 Relinquished by (printed name and signature) Date Time Received by (printed name and signature) Date Time
Gerrit Gardner Jordan Peeg 11/6/2019 10:00
 Relinquished by (printed name and signature) Date Time Received by (printed name and signature) Date Time

SHIP TO: Vista Analytical Laboratory
 1104 Windfield Way
 El Dorado Hills, CA 95762
 (916) 673-1520 * Fax (916) 673-0106
 ATTN: Martha Mader
 Method of Shipment: FedEx
 Tracking No.: _____

Add Analysis(es) Requested
 Container(s) _____
 PFAS by Isotope Dilution
 EPA Method 537 (DW only)
 PFOA/PFOA UCMR3 PFAS List 6
 UCMR3 PFAS List 6
 537.1 List of 14 or 18 (Circle One)
 EPA Draft List of 24
 OTHER: Please attach analyte list
 PFOA/PFOA UCMR3 PFAS List 6
 UCMR3 PFAS List 6
 537.1 List of 14
 537.1 List of 18

Sample ID	Date	Time	Location/ Sample Description	Quantity	Type	Matrix	PFOA/PFOA UCMR3 PFAS List 6	UCMR3 PFAS List 6	537.1 List of 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: Please attach analyte list	PFOA/PFOA UCMR3 PFAS List 6	UCMR3 PFAS List 6	537.1 List of 14	537.1 List of 18	Comments
<u>W1-CV-18LW21-1119</u>	<u>11/12/19</u>	<u>11:10</u>	<u>DIV</u>	<u>2</u>	<u>PY</u>	<u>DW</u>										
<u>W1-CV-18LW21P-1119</u>		<u>11:15</u>														
<u>W1-CV-18LW21-1119</u>		<u>11:10</u>														
<u>W1-CV-18LW21-1119</u>		<u>10:20</u>														
<u>W1-CV-18LW21-1119-075</u>		<u>10:20</u>														
<u>W1-CV-18LW21-1119-0750</u>		<u>10:20</u>														
<u>W1-CV-18LW21-1119</u>		<u>08:30</u>														
<u>W1-CV-18LW21-1119</u>		<u>08:35</u>														
<u>W1-CV-18LW21-1119</u>		<u>08:30</u>														
<u>W1-CV-18LW21-1119</u>		<u>09:10</u>														<u>One of the labels says time 08:35. Should be 08:30</u>

Special Instructions/Comments

SEND DOCUMENTATION AND RESULTS TO:

Name: _____
 Company: _____
 Address: _____
 City: _____
 Phone: _____
 Email: _____

Container Types: P= HDPE, PJ= HDPE Jar
 PY= Polypropylene, O = Other: _____
 Bottle Preservation Type: TZ = Truma _____
 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: _____



CHAIN OF CUSTODY

For Laboratory Use Only
 Work Order #: _____ Temp: _____ °C
 Storage ID: _____ Storage Secured: Yes No

Project ID: _____ PO#: _____ Sampler: _____ (name)

TAT Standard: 21 days
 (check one): 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
<i>see page 1</i>					
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

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

Container(s) _____

PFAS by Isotope Dilution _____

EPA Method 537 (DW only) _____

OTHER: Please attach analysis list _____

Sample ID	Date	Time	Location/ Sample Description	Quantity	Type	Matrix	PFAS/PFOS	UCMR3 PFAS Lists	537-1 List: 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: Please attach analysis list	PFAS/PFOS	UCMR3 PFAS Lists	537-1 List of 14	537-1 List of 18	Comments
WL-AF-1FB68-1119	11/4/2019	15:15	DW	2	PJ	DW										
WL-AF-1RW01-1119		13:10														
WL-AF-1RW02-1119		13:15														
WL-AF-1FB01-1119		13:10														
WL-AF-1RW40-1119		11:10														
WL-AF-1FB																
WL-AF-1FB40-1119		11:10														
WL-A06-RW08-1119	11/5/2019	08:55														
WL-A06-FB08-1119	11/5/2019	08:55														

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:

Name: _____
 Company: _____
 Address: _____
 City: _____
 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: _____



CHAIN OF CUSTODY

For Laboratory Use Only

Work Order #: _____ Temp: _____ °C
 Storage ID: _____ Storage Secured: Yes No

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

Project ID: _____ PO#: _____ Sampler: _____ (name)

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

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

Method of Shipment: _____
 Tracking No.: _____

ATTN: _____

Add Analysis(es) Requested

Container(s) _____

PFAS by Isotope Dilution _____

EPA Method 837 (DW only) _____

OTHER: Please attach analyte list _____

Sample ID	Date	Time	Location/ Sample Description	Quantity	Type	Matrix	PFDA/PPOS	UCMR3 PFAS List:6	537.1 List: 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: Please attach analyte list	PFDA/PPOS	UCMR3 PFAS List:6	537.1 List of 14	537.1 List of 18	Comments
WT-ACG-RW04-1119	11/4/2019	16:20	DW	2	PY	DW										
WT-ACG-FB04-1119		16:20														
WT-ACG-RW03-1119		16:20														
WT-ACG-RW03P-1119		16:15														
WT-ACG-FB03-1119		16:10														
WT-ACG-RW19-1119	11/5/2019	08:05														
WT-ACG-RW19-1119-MS		08:05														
WT-ACG-RW19-1119-MSD		08:05														
WT-ACG-FB19-1119		08:05														
WT-ACG-RW14-1119		10:25														

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:

Name: _____
 Company: _____
 Address: _____
 City: _____
 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: _____



CHAIN OF CUSTODY

For Laboratory Use Only
 Work Order #: _____ Temp: _____ °C
 Storage ID: _____ Storage Secured: Yes No

Project ID: _____ PO#: _____ Sampler: _____ (name)

TAT Standard: 21 days
 (check one): 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
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

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

Method of Shipment: _____

Add Analysis(es) Requested

ATTN: _____

Tracking No.: _____

Sample ID	Date	Time	Location/ Sample Description	Add Analysis(es) Requested										Comments				
				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	PFOA/PFOS	UCMR3 PFAS List 6		537.1 List of 14	537.1 List of 18		
WT-A06-FB14-1119	11/5/2019	16:25	DW	2	PY	DW												
WT-AF-1RW77-1119		13:20																
WT-AF-1RW77R2-1119		13:25																
WT-AF-1FB77-1119		13:20																
WT-AF-1RW28-1119		16:30																
WT-AF-1FB28-1119		16:30																
WT-AF-1RW12-1119		11:15																
WT-AF-1FB12-1119		11:15																
WT-A06-RW05-1119	11/6/2019	08:00																
WT-A06-FB05-1119	11/6/2019	08:00																

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:

Name: _____
 Company: _____
 Address: _____
 City: _____
 Phone: _____
 Email: _____

Container Types: P= HDPE, PJ= HDPE Jar

Bottle Preservation Type:

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment,

PY= Polypropylene, O = Other: _____

TZ = Trizma: _____

SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other: _____



CHAIN OF CUSTODY

For Laboratory Use Only
 Work Order #: _____ Temp: _____ °C
 Storage ID: _____ Storage Secured: Yes No

Project ID: NASW Off-Base Drinking Water Sampling PO#: 148010215 ~~10067015~~ Sampler: G. Gardner A. Vogt (name)

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

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
<u>G. Gardner A. Vogt</u>	<u>12/18/2019</u>	<u>10.30</u>	<u>Martha Maier</u>		

Sample ID	Date	Time	Location/Sample Description	Add Analysis(es) Requested										Comments									
				Quantity	Type	Matrix	PFOA/PFOS	UCMR3 PFAS List 8	537 List: 14	Full List of 24	Other: Please List Below	Branch and Linear	Mod. EPA Method 537		EPA Method 537(DW only)								
<u>WT-CV-1RW07-1219</u>	<u>12/18/19</u>	<u>0900</u>	<u>DW</u>	<u>2</u>	<u>P1</u>	<u>DW</u>																	
<u>WT-CV-1RW07-1219-MS</u>																							
<u>WT-CV-1RW07-1219-MSD</u>																							
<u>WT-CV-1FBC7-1219</u>																							

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:

Name: Travis Pitts
 Company: CH2M Jacobs
 Address: _____
 City: _____
 Phone: _____
 Email: travis.pitts@jacobs.com

Container Types: P= HDPE, PJ= HDPE Jar
 O = Other: _____
 Bottle Preservation Type: T = Thiosulfate, 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: _____



CHAIN OF CUSTODY

For Laboratory Use Only
 Work Order #: _____ Temp: _____ °C
 Storage ID: _____ Storage Secured: Yes No

Project ID: 9000NVT3 PO#: 148010215 Sampler: Jordan Perry Lemon
Gerrit Gardner (name)

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

Relinquished by (printed name and signature) Travis Pitts Jacobs Date _____ Time _____ Received by (printed name and signature) _____ Date _____ Time _____
Gerrit Gardner Jordan Perry Lemon 10/31/2019 13:30

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

Method of Shipment: FedEx
 Tracking No.: _____
 Add Analysis(es) Requested
 Container(s)
 PFAS by Isotope Dilution
 EPA Method 537 (DW only)

Sample ID	Date	Time	Location/ Sample Description	Quantity	Type	Matrix	PFOM/PFOS	UCMR3 PFAS List: 6	537.1 List: 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: Please attach analyte list	PFOM/PFOS	UCMR3 PFAS List: 6	537.1 List of 14	537.1 List of 18	Comments
W1-CV-1RW72-1019	10/29/2019	0905	DW	2	P4	DW										
W1-CV-1FB72-1019	10/29/2019	0905	DW	2	P4	DW										
W1-AF-3RW41-1019	10/29/2019	1305	DW	2	P4	DW										
W1-AF-3FB41-1019	10/29/2019	1305	DW	2	P4	DW										
W1-AF-1RW51-1019	10/29/2019	1340	DW	2	P4	DW										
W1-AF-1FB51-1019	10/29/2019	1340	DW	2	P4	DW										
W1-AC6-RW8-1019	10/29/2019	1520	DW	2	P4	DW										
W1-AC6-FB18-1019	10/29/2019	1520	DW	2	P4	DW										
W1-AC6-RW24-1019	10/29/2019	1615	DW	2	P4	DW										
W1-AC6-FB24-1019	10/29/2019	1615	DW	2	P4	DW										

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:
 Name: _____
 Company: _____
 Address: _____
 City: _____
 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: _____



CHAIN OF CUSTODY

For Laboratory Use Only
 Work Order #: _____ Temp: _____ °C
 Storage ID: _____ Storage Secured: Yes No

Project ID: _____ PO#: _____ Sampler: _____ (name)

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

See page 1

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

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

Method of Shipment: _____

Add Analysis(es) Requested

ATTN: _____

Tracking No.: _____

Container(s)

PFAS by Isotope Dilution

EPA Method 537 (DW only)

Sample ID	Date	Time	Location/ Sample Description	Quantity	Type	Matrix	PFON PFOA	UCMR3 PFAS Lists	537.1 List: 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: Please attach analyte list	PFON PFOA	UCMR3 PFAS Lists	537.1 List of 14	537.1 List of 18	Comments
WI-ACG-RW24P-1019	10/29/2019	1620	DW	2	PY	DW										
WI-CV-3RW07-1019	10/30/2019	0805	DW	2	PY	DW										
WI-CV-3FB07-1019	10/30/2019	0805	DW	2	PY	DW										
WI-CV-3RW10-1019	10/30/2019	0905	DW	2	PY	DW										
WI-CV-3FB10-1019	10/30/2019	0905	DW	2	PY	DW										
WI-CV-3RW11-1019	10/30/2019	1010	DW	2	PY	DW										
WI-CV-3FB11-1019	10/30/2019	1010	DW	2	PY	DW										
WI-CV-1RW34-1019	10/30/2019	1040	DW	2	PY	DW										
WI-CV-1FB34-1019	10/30/2019	1040	DW	2	PY	DW										
WI-CV-2RW06-1019	10/30/2019	1305	DW	2	PY	DW										

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:

Name: _____
 Company: _____
 Address: _____
 City: _____
 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: _____



CHAIN OF CUSTODY

For Laboratory Use Only
 Work Order #: _____ Temp: _____ °C
 Storage ID: _____ Storage Secured: Yes No

Project ID: _____ PO#: _____ Sampler: _____ (name)

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

see page 1

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

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		PFAS by Isotope Dilution	EPA Method 537 (DW only)
Container(s)			
Quantity	Type	Matrix	OTHER: Please attach analyte list
			PFOA/PFOS
			UCMR3 PFAS Lists
			537:1 List of 14 or 18 (Circle One)
			537:1 List of 14
			537:1 List of 18

Sample ID	Date	Time	Location/ Sample Description	Quantity	Type	Matrix	PFOA/PFOS	UCMR3 PFAS Lists	537:1 List of 14 or 18 (Circle One)	537:1 List of 14	537:1 List of 18	Comments
W1-CV-2FB06-1019	10/30/2019	1305	DW	2	P4	DW						
W1-CV-2RW02-1019	10/30/2019	1410	DW	2	P4	DW						
W1-CV-2FB02-1019	10/30/2019	1410	DW	2	P4	DW						
W1-CV-1RW14-1019	10/30/2019	1435	DW	2	P4	DW						
W1-CV-1FB14-1019	10/30/2019	1435	DW	2	P4	DW						
W1-CV-1RW01-1019	10/30/2019	1520	DW	2	P4	DW						
W1-CV-1FB01-1019	10/30/2019	1520	DW	2	P4	DW						

Special Instructions/Comments: _____

SEND DOCUMENTATION AND RESULTS TO:

Name: _____
 Company: _____
 Address: _____
 City: _____
 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: _____



CHAIN OF CUSTODY

For Laboratory Use Only
 Work Order #: _____ Temp: _____ °C
 Storage ID: _____ Storage Secured: Yes No

Project ID: _____ PO#: _____ Sampler: _____
 (name)

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

See Page 1

Relinquished by (printed name and signature) _____ Date _____ Time _____ Received by (printed name and signature) _____ Date _____ Time _____

Relinquished by (printed name and signature) _____ Date _____ Time _____ Received by (printed name and signature) _____ Date _____ Time _____

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

Container(s)

PFAS by Isotope Dilution

EPA Method 537 (DW only)

Sample ID	Date	Time	Location/ Sample Description	Quantity	Type	Matrix	Add Analysis(es) Requested				OTHER: Please attach analyte list	PFAS by Isotope Dilution	EPA Method 537 (DW only)	Comments	
							PFOM/PFOS	UCMR3 PFAS Lists	537.1 List: 14 or 18 (Circle One)	EPA Draft List of 24					
WT-CV-1RW27-1019	10/31/2019	0835	DW	2	PY	DW									
WT-CV-1FB27-1019	10/31/2019	0835	DW	2	PY	DW									
WT-CV-1RW25-1019	10/31/2019	0900	DW	2	PY	DW									
WT-CV-1FB25-1019	10/31/2019	0900	DW	2	PY	DW									
WT-CV-1RW26-1019	10/31/2019	0915	DW	2	PY	DW									
WT-CV-1FB26-1019	10/31/2019	0915	DW	2	PY	DW									
WT-CV-1RW24-1019	10/31/2019	0930	DW	2	PY	DW									
WT-CV-1FB24-1019	10/31/2019	0930	DW	2	PY	DW									
WT-CV-1RW23-1019	10/31/2019	0950	DW	2	PY	DW									
WT-CV-1FB23-1019	10/31/2019	0950	DW	2	PY	DW									

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:

Name: _____
 Company: _____
 Address: _____
 City: _____
 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: _____



CHAIN OF CUSTODY

For Laboratory Use Only
 Work Order #: _____ Temp: _____ °C
 Storage ID: _____ Storage Secured: Yes No

Project ID: _____ PO#: _____ Sampler: _____
 (name)

TAT Standard: 21 days
 (check one): 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 _____
 Relinquished by (printed name and signature) _____ Date _____ Time _____ Received by (printed name and signature) _____ Date _____ Time _____

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			
Container(s)			
Quantity	Type	Matrix	Comments
		PFOA/ PFOS	
		UCMR3 PFAS List:6	
		537.1 List: 14 or 18 (Circle One)	
		EPA Draft List of 24	
		OTHER: Please attach analyte list	
		PFOA/ PFOS	
		UCMR3 PFAS List:6	
		537.1 List of 14	
		537.1 List of 18	

Sample ID	Date	Time	Location/ Sample Description	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	PFOA/ PFOS	UCMR3 PFAS List:6	537.1 List of 14	537.1 List of 18	Comments
WT-CV-1RW23P-1019	10/31/2019	0955	DW	2	PY	DW										
WT-CV-2RW4-1019	10/31/2019	1100	DW	2	PY	DW										
WT-CV-2FB04-1019	10/31/2019	1100	DW	2	PY	DW										
WT-CV-1RW22-1019	10/31/2019	1120	DW	2	PY	DW										
WT-CV-1FB22-1019	10/31/2019	1120	DW	2	PY	DW										

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:
 Name: _____
 Company: _____
 Address: _____
 City: _____
 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: _____



CHAIN OF CUSTODY

For Laboratory Use Only

Work Order #: _____ Temp: _____ °C

Storage ID: _____ Storage Secured: Yes No

Project ID: 43941 off Base DW Sampling PO#: 148010215 Sampler: G. Gardner, E. Culler
(name)

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

Relinquished by (printed name and signature): G. Gardner Date: 1/16/2020 Time: 12:00 Received by (printed name and signature): _____ Date: _____ Time: _____

Relinquished by (printed name and signature): _____ Date: _____ Time: _____ Received by (printed name and signature): _____ Date: _____ Time: _____

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

Method of Shipment: FedEx

ATTN: Martha Maier

Tracking No.: _____

Add Analysis(es) Requested

Container(s)

Mod. EPA Method 537

EPA Method 537(DW only)

Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	PFOA/PFOS	UCMR3 PFAS List 5	537 List 14	Full List of 24	Other: Please List Below	Branch and Linear	PFOA/PFOS	UCMR3 PFAS List 5	PFAS List: 44-B	Comments
WAF-RW104-0120	1/16/20	11:40	DW	2	P4	DW										
WAF-RW104-0120-M5		11:40														
WAF-RW104-0120-M5D		11:40														
WAF-RW104A-0120		11:45														
WAF-FB104-0120		11:40														

Special Instructions/Comments: _____

SEND DOCUMENTATION AND RESULTS TO:

Name: Tiffany Hill
 Company: CH2M Hill
 Address: _____
 City: _____
 Phone: _____
 Email: tiffany.hill@jacobs.com

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

Bottle Preservation Type: T = Thiosulfate,
 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: _____

Attachment 2
Raw Data Table

Detections of PFAS in Drinking Water – Area 6

Results of Investigation of Per- and Polyfluoroalkyl Substances
in Off-Base Drinking Water—
Area 6

Station ID	WI-A06-RW03				WI-A06-RW04		WI-A06-RW05		WI-A06-RW08	WI-A06-RW14	
Sample ID	WI-A06-RW03-1119	WI-A06-RW03P-1119	WI-A06-RW03-0520	WI-A06-RW03P-0520	WI-A06-RW04-1119	WI-A06-RW04-0520	WI-A06-RW05-1119	WI-A06-RW05-0520	WI-A06-RW08-1119	WI-A06-RW14-1119	WI-A06-RW14-0520
Sample Date	11/04/19	11/04/19	05/19/20	05/19/20	11/04/19	05/19/20	11/06/19	05/19/20	11/05/19	11/05/19	05/21/20
Chemical Name											
Semivolatile Organic Compounds (UG/L)											
Perfluorooctane Sulfonate (PFOS)	17.2	15.9	13.7	12.8	2.21 J	5.34	76.1	56.2	82.1	8.77 J	13.4
Perfluorohexanoic Acid (PFHxA)	67.7	66.0	59.2	58.7	3.56 J	5.06	50.2	51.6	18.4	73.0	58.6
Perfluorooctanoic acid (PFOA)	36.5	35.5	33.2	32.0	3.86 J	3.98	52.0	56.2	28.6	24.8	24.8
Perfluorohexanesulfonic acid (PFHxS)	129	118	106	106	51.7	88.3	169	160	109	232	252
Perfluorobutanesulfonic acid (PFBS)	43.0	40.3	37.2	37.6	33.1	41.3	21.0	21.3	22.0	53.9	53.8
Perfluoroheptanoic acid (PFHpA)	23.4	22.9	20.6	19.8	10.2 U	2.73	17.9	18.2	8.73 J	18.7	18.1
Perfluorononanoic acid (PFNA)	9.87 U	9.99 U	1.99 U	2.05 U	10.2 U	2 U	10 U	0.934 J	3.42 J	10.4 U	2.06 U

Notes:

Shading indicates detections

Bold indicates detection above LHA

J - Analyte present, value may or may not be accurate or

U - The material was analyzed for, but not detected

NG/L - Micrograms per liter

All analytes not shown in table were not detected in any samples from location associated with Area 6

Detections of PFAS in Drinking Water – Area 6

Results of Investigation of Per- and Polyfluoroalkyl Substances
in Off-Base Drinking Water—
Area 6

Station ID	WI-A06-RW18		WI-A06-RW19		WI-A06-RW20		WI-A06-RW24		
Sample ID	WI-A06-RW18-1019	WI-A06-RW18-0520	WI-A06-RW19-1119	WI-A06-RW19-0520	WI-A06-RW20-0920	WI-A06-RW20P-0920	WI-A06-RW24-1019	WI-A06-RW24P-1019	WI-A06-RW24-0520
Sample Date	10/29/19	05/21/20	11/05/19	05/26/20	09/03/20	09/03/20	10/29/19	10/29/19	5/26/2020
Chemical Name									
Semivolatile Organic Compounds (UG/L)									
Perfluorooctane Sulfonate (PFOS)	12.6	16.8	91.3	96.9	30.9	29.9	203	225	198
Perfluorohexanoic Acid (PFHxA)	29.1	24.4	56.0	68.1	23.4	22.8	49.1	47.0	46.9
Perfluorooctanoic acid (PFOA)	24.5	28.7	41.4	46.4	48.3	47.0	53.0	50.9	44.9
Perfluorohexanesulfonic acid (PFHxS)	78.2	91.1	236	236	141	137	381	429	365
Perfluorobutanesulfonic acid (PFBS)	22.6	21.9	52.8	50.4	20.6	19.8	25.7	29.8	19.9
Perfluoroheptanoic acid (PFHpA)	8.64 J	9.82	28.8	35.8	4.33	4.11	7.10 J	8.43 J	7.53
Perfluorononanoic acid (PFNA)	10.3 U	2.02 U	3.71 J	3.17	2.03 U	2.03 U	10.8 U	10.5 U	2.03 U

Notes:

Shading indicates detections

Bold indicates detection above LHA

J - Analyte present, value may or may not be accurate or

U - The material was analyzed for, but not detected

NG/L - Micrograms per liter

All analytes not shown in table were not detected in any samples from location associated with Area 6

Detections of PFAS in Drinking Water – Ault Field

Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water—
Ault Field

Station ID	WI-AF-1RW01			WI-AF-1RW12			WI-AF-1RW28	
Sample ID	WI-AF-1RW01-1119	WI-AF-1RW01P-1119	WI-AF-1RW01-0520	WI-AF-1RW12-1119	WI-AF-1RW12-0520	WI-AF-1RW12P-0520	WI-AF-1RW28-1119	WI-AF-1RW28-0520
Sample Date	11/04/19	11/04/19	05/19/20	11/05/19	05/19/20	05/19/20	11/05/19	05/20/20
Chemical Name								
Semivolatile Organic Compounds (UG/L)								
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	9.76 U	9.74 U	2.03 U	10 U	2.08 U	1.97 U	10.1 U	2.09 U
Perfluorooctane Sulfonate (PFOS)	9.76 U	9.74 U	2.03 U	10 U	2.19	2.22	10.1 U	0.85 J
Perfluorohexanoic Acid (PFHxA)	9.76 U	9.74 U	2.03 U	10 U	2.35	2.40	5.43 J	5.49
Perfluorooctanoic acid (PFOA)	9.76 U	9.74 U	2.03 U	10 U	5.70	5.25	28.8	28.4
Perfluorohexanesulfonic acid (PFHxS)	9.76 U	9.74 U	2.03 U	10 U	1.68 J	1.44 J	8.68 J	8.99
Perfluorobutanesulfonic acid (PFBS)	9.76 U	9.74 U	2.03 U	10 U	4.20	4.24	2.28 J	2.48
Perfluoroheptanoic acid (PFHpA)	9.76 U	9.74 U	2.03 U	10 U	2.02 J	1.72 J	3.76 J	3.43
Perfluorononanoic acid (PFNA)	9.76 U	9.74 U	2.03 U	10 U	2.08 U	1.97 U	10.1 U	2.09 U
Perfluorodecanoic acid (PFDA)	9.76 U	9.74 U	2.03 U	10 U	2.08 U	1.97 U	10.1 U	2.09 U

Notes:

Shading indicates detections

Bold indicates detection above LHA

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

NG/L - Micrograms per liter

All analytes not shown in table were not detected in any samples from location associated with Ault Field

Detections of PFAS in Drinking Water – Ault Field

Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water—
Ault Field

Station ID	WI-AF-1RW32				WI-AF-1RW33		WI-AF-1RW40	
Sample ID	WI-AF-1RW32-1119	WI-AF-1RW32-0520	WI-AF-1RW32-0620	WI-AF-1RW32P-0620	WI-AF-1RW33-1119	WI-AF-1RW33-0520	WI-AF-1RW40-1119	WI-AF-1RW40-0520
Sample Date	11/04/19	05/19/20	06/18/20	06/18/20	11/04/19	05/21/20	11/04/19	05/19/20
Chemical Name								
Semivolatile Organic Compounds (UG/L)								
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	10.4 U	2.05 U	2.09 U	2.06 U	9.99 U	2.06 U	9.82 U	2.09 U
Perfluorooctane Sulfonate (PFOS)	7690	36300	43100	42300	9.99 U	2.06 U	2.97 J	3.81
Perfluorohexanoic Acid (PFHxA)	216 J	626	793	783	70.5	58.2	4.03 J	2.10
Perfluorooctanoic acid (PFOA)	51.7 J	231	251	247	9.99 U	2.06 U	13.9	7.90
Perfluorohexanesulfonic acid (PFHxS)	1600	9620	8130	8620	5.92 J	6.37	8.95 J	7.13
Perfluorobutanesulfonic acid (PFBS)	312 J	1050	1720	1670	70.6	65.6	4.24 J	2.92
Perfluoroheptanoic acid (PFHpA)	21.5	83.7	87.3	84.4	1.88 J	1.54 J	1.94 J	1.13 J
Perfluorononanoic acid (PFNA)	10.4 U	2.17	2.12	2.00	9.99 U	2.06 U	9.82 U	2.09 U
Perfluorodecanoic acid (PFDA)	10.4 U	0.812 J	1.17 J	1.12 J	9.99 U	2.06 U	9.82 U	2.09 U

Notes:

Shading indicates detections

Bold indicates detection above LHA

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

NG/L - Micrograms per liter

All analytes not shown in table were not detected in any samples from location associated with Ault Field

Detections of PFAS in Drinking Water – Ault Field

Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water—
Ault Field

Station ID	WI-AF-1RW51		WI-AF-1RW68		WI-AF-1RW77		WI-AF-1RW104	
Sample ID	WI-AF-1RW51-1019	WI-AF-1RW51-0520	WI-AF-1RW68-1119	WI-AF-1RW68-0520	WI-AF-1RW77-1119	WI-AF-1RW77P-1119	WI-AF-1RW104-0120	WI-AF-1RW104P-0120
Sample Date	10/29/19	05/21/20	11/04/19	05/19/20	11/05/19	11/05/19	01/16/20	01/16/20
Chemical Name								
Semivolatile Organic Compounds (UG/L)								
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	10.7 U	2.06 U	10.2 U	2.09 U	10.1 U	10.1 U	10.4 U	9.88 U
Perfluorooctane Sulfonate (PFOS)	10.7 U	2.06 U	10.2 U	2.09 U	2.94 J	2.19 J	10.4 U	9.88 U
Perfluorohexanoic Acid (PFHxA)	10.7 U	2.06 U	10.2 U	2.09 U	10.1 U	10.1 U	10.4 U	9.88 U
Perfluorooctanoic acid (PFOA)	10.7 U	2.06 U	10.2 U	2.09 U	10.8	11.4	10.4 U	9.88 U
Perfluorohexanesulfonic acid (PFHxS)	10.7 U	1.22 J	10.2 U	2.09 U	15.7	16.4	10.4 U	9.88 U
Perfluorobutanesulfonic acid (PFBS)	10.7 U	2.06 U	10.2 U	2.09 U	10.1 U	10.1 U	10.4 U	9.88 U
Perfluoroheptanoic acid (PFHpA)	10.7 U	2.06 U	10.2 U	2.09 U	10.1 U	10.1 U	10.4 U	9.88 U
Perfluorononanoic acid (PFNA)	10.7 U	2.06 U	10.2 U	2.09 U	10.1 U	10.1 U	10.4 U	9.88 U
Perfluorodecanoic acid (PFDA)	10.7 U	2.06 U	10.2 U	2.09 U	10.1 U	10.1 U	10.4 U	9.88 U

Notes:

Shading indicates detections

Bold indicates detection above LHA

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

NG/L - Micrograms per liter

All analytes not shown in table were not detected in any samples from location associated with Ault Field

Detections of PFAS in Drinking Water – Ault Field

Results of Investigation of Per- and Polyfluoroalkyl Substances in Off-Base Drinking Water—
Ault Field

Station ID	WI-AF-3RW41		
Sample ID	WI-AF-3RW41-1019	WI-AF-3RW41-0520	WI-AF-3RW41P-0520
Sample Date	10/29/19	05/19/20	5/19/2020
Chemical Name			
Semivolatile Organic Compounds (UG/L)			
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	10.2 U	2.07 U	2.01 U
Perfluorooctane Sulfonate (PFOS)	10.5	16.1	17.3
Perfluorohexanoic Acid (PFHxA)	15.3	18.0	19.0
Perfluorooctanoic acid (PFOA)	4.78 J	5.58	5.71
Perfluorohexanesulfonic acid (PFHxS)	41.8	55.6	61.8
Perfluorobutanesulfonic acid (PFBS)	56.9	57.4	57.6
Perfluoroheptanoic acid (PFHpA)	3.44 J	3.58	3.90
Perfluorononanoic acid (PFNA)	10.2 U	2.07 U	2.01 U
Perfluorodecanoic acid (PFDA)	10.2 U	2.07 U	2.01 U

Notes:

Shading indicates detections

Bold indicates detection above LHA

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

NG/L - Micrograms per liter

All analytes not shown in table were not detected in any samples from location associated with Ault Field

Detections of PFAS in Drinking Water

Coupeville

Results of Investigation of Per- and Polyfluoroalkyl Substances in

Off-Base Drinking Water—

Outlying Landing Field Coupeville

Station ID	WI-CV-1RW01		WI-CV-1RW07				WI-CV-1RW09		WI-CV-1RW10
Sample ID	WI-CV-1RW01-1019	WI-CV-1RW01-0520	WI-CV-1RW07-1119	WI-CV-1RW07-1219	WI-CV-1RW07-0520	WI-CV-1RW07P-0520	WI-CV-1RW09-1119	WI-CV-1RW09-0520	WI-CV-1RW10-1119
Sample Date	10/30/19	05/20/20	11/01/19	12/18/19	05/20/20	05/20/20	11/06/19	05/26/20	11/06/19
Chemical Name									
Semivolatile Organic Compounds (UG/L)									
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	9.59 U	2.01 U	NA	9.78 U	2.05 U	1.98 U	10.1 U	2 U	9.93 U
Perfluorooctane Sulfonate (PFOS)	9.59 U	1.76 J	NA	9.78 U	1.71 J	1.70 J	10.1 U	2 U	9.93 U
Perfluorohexanoic Acid (PFHxA)	99.6	89.4	NA	52.5 J	65.0	74.1	10.1 U	2.80	9.93 U
Perfluorooctanoic acid (PFOA)	352	324	NA	150 J	193	221	10.1 U	2 U	9.93 U
Perfluorohexanesulfonic acid (PFHxS)	340	353	NA	66.5	72.0	75.3	10.1 U	2 U	9.93 U
Perfluorobutanesulfonic acid (PFBS)	39.9	32.0	NA	22.5	31.9	34.4	4.36 J	3.89	9.93 U
Perfluoroheptanoic acid (PFHpA)	32.5	27.9	NA	13.3 J	13.7	16.2	10.1 U	2 U	9.93 U

Notes:

Shading indicates detections

Bold indicates detection above LHA

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

NG/L - Micrograms per liter

DD - Analyte reported at a dilution

All analytes not shown in table were not detected in any samples from location associated with OLF Coupeville

Detections of PFAS in Drinking Water

Coupeville

Results of Investigation of Per- and Polyfluoroalkyl Substances in

Off-Base Drinking Water—

Outlying Landing Field Coupeville

Station ID	WI-CV-1RW14		WI-CV-1WR20	WI-CV-1RW21		WI-CV-1RW22		WI-CV-1RW23		
Sample ID	WI-CV-1RW14-1019	WI-CV-1RW14-0520	WI-CV-1RW20-1119	WI-CV-1RW21-1119	WI-CV-1RW21P-1119	WI-CV-1RW22-1019	WI-CV-1RW22-0520	WI-CV-1RW23-1019	WI-CV-1RW23P-1019	WI-CV-1RW23-0520
Sample Date	10/30/219	05/22/20	11/08/19	11/01/19	11/01/19	10/31/19	05/18/20	10/31/19	10/31/19	05/20/20
Chemical Name										
Semivolatile Organic Compounds (UG/L)										
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	10 U	2.02 U	10 U	10.4 U	10.3 U	10.1 U	2 U	9.92 U	9.56 U	2.04 U
Perfluorooctane Sulfonate (PFOS)	10 U	2.02 U	10 U	10.4 U	10.3 U	10.1 U	2 U	9.92 U	9.96 U	1.44 J
Perfluorohexanoic Acid (PFHxA)	10 U	2.02 U	10 U	10.4 U	10.3 U	10.1 U	2 U	41.4	39.9	40.7
Perfluorooctanoic acid (PFOA)	10 U	2.02 U	10 U	10.4 U	10.3 U	10.1 U	2 U	62.5	63.5	58.7
Perfluorohexanesulfonic acid (PFHxS)	10 U	2.02 U	10 U	10.4 U	10.3 U	10.1 U	2 U	59.3	61.9	61.0
Perfluorobutanesulfonic acid (PFBS)	10 U	2.02 U	10 U	10.4 U	10.3 U	10.1 U	2 U	17.5	17.2	18.7
Perfluoroheptanoic acid (PFHpA)	10 U	2.02 U	10 U	10.4 U	10.3 U	10.1 U	2 U	10.6	10.3	9.85

Notes:

Shading indicates detections

Bold indicates detection above LHA

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

NG/L - Micrograms per liter

DD - Analyte reported at a dilution

All analytes not shown in table were not detected in any samples from location associated with OLF Coupeville

Detections of PFAS in Drinking Water

Coupeville

Results of Investigation of Per- and Polyfluoroalkyl Substances in

Off-Base Drinking Water—

Outlying Landing Field Coupeville

Station ID	WI-CV-1RW24		WI-CV-1RW25		WI-CV-1RW26			WI-CV-1RW27		WI-CV-1RW34	
Sample ID	WI-CV-1RW24-1019	WI-CV-1RW25-1019	WI-CV-1RW25-0520	WI-CV-1RW26-1019	WI-CV-1RW26-0520	WI-CV-1RW26P-0520	WI-CV-1RW27-1019	WI-CV-1RW27-1019	WI-CV-1RW34-0419	WI-CV-1RW34-0520	
Sample Date	10/31/19	10/31/19	05/20/20	10/31/19	05/20/20	05/20/20	10/31/19	05/20/20	10/30/19	05/22/20	
Chemical Name											
Semivolatile Organic Compounds (UG/L)											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	9.81 U	10.2 U	2.07 U	10.1 U	2.02 U	2.02 U	9.88 U	2.06 U	10.5 U	1.18 J	
Perfluorooctane Sulfonate (PFOS)	9.81 U	10.2 U	2.07 U	10.1 U	2.02 U	2.02 U	9.88 U	2.06 U	10.5 U	1.95 U	
Perfluorohexanoic Acid (PFHxA)	9.81 U	10.2 U	2.07 U	10.1 U	2.02 U	2.02 U	9.88 U	2.06 U	208	211	
Perfluorooctanoic acid (PFOA)	9.81 U	10.2 U	2.07 U	10.1 U	2.02 U	2.02 U	9.88 U	2.06 U	361	409	
Perfluorohexanesulfonic acid (PFHxS)	9.81 U	10.2 U	2.07 U	10.1 U	2.02 U	2.02 U	9.88 U	2.06 U	72.1	111	
Perfluorobutanesulfonic acid (PFBS)	9.81 U	10.2 U	2.07 U	10.1 U	2.02 U	2.02 U	9.88 U	2.06 U	73.1	109	
Perfluoroheptanoic acid (PFHpA)	9.81 U	10.2 U	2.07 U	10.1 U	2.02 U	2.02 U	9.88 U	2.06 U	35.5	30.7	

Notes:

Shading indicates detections

Bold indicates detection above LHA

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

NG/L - Micrograms per liter

DD - Analyte reported at a dilution

All analytes not shown in table were not detected in any samples from location associated with OLF Coupeville

Detections of PFAS in Drinking Water

Coupeville

Results of Investigation of Per- and Polyfluoroalkyl Substances in

Off-Base Drinking Water—

Outlying Landing Field Coupeville

Station ID	WI-CV-1RW37	WI-CV-1RW40			WI-CV-1RW67	WI-CV-1RW72		WI-CV-1RW90		
Sample ID	WI-CV-1RW37-0520	WI-CV-1RW40-1119	WI-CV-1RW40P-1119	WI-CV-1RW40-0520	WI-CV-1RW67-1119	WI-CV-1RW72-1019	WI-CV-1RW72-0520	WI-CV-1RW90-1119	WI-CV-1RW90-0520	WI-CV-1RW90P-0520
Sample Date	05/18/20	11/01/19	11/01/19	05/22/20	11/08/19	10/29/19	05/27/20	11/20/19	05/18/20	05/18/20
Chemical Name										
Semivolatile Organic Compounds (UG/L)										
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	2.03 U	10 U	9.97 U	2.07 U	9.87 U	9.98 U	2 U	10 U	1.99 U	2.01 U
Perfluorooctane Sulfonate (PFOS)	2.03 U	10 U	9.97 U	2.07 U	9.87 U	9.98 U	2 U	9.01 J	10.5	10.2
Perfluorohexanoic Acid (PFHxA)	2.03 U	10 U	9.97 U	2.07 U	9.87 U	2.02 J	2.14	47.7	54.5	51.0
Perfluorooctanoic acid (PFOA)	2.03 U	10 U	9.97 U	2.07 U	9.87 U	9.98 U	1.26 J	176	173	164
Perfluorohexanesulfonic acid (PFHxS)	2.03 U	10 U	9.97 U	2.07 U	9.87 U	9.98 U	1.13 J	230	213	205
Perfluorobutanesulfonic acid (PFBS)	2.03 U	10 U	9.97 U	2.07 U	9.87 U	1.19 J	1.43 J	34.9	45.7	42.4
Perfluoroheptanoic acid (PFHpA)	2.03 U	10 U	9.97 U	2.07 U	9.87 U	9.98 U	2 U	20.2	16.5	15.6

Notes:

Shading indicates detections

Bold indicates detection above LHA

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

NG/L - Micrograms per liter

DD - Analyte reported at a dilution

All analytes not shown in table were not detected in any samples from location associated with OLF Coupeville

Detections of PFAS in Drinking Water

Coupeville

Results of Investigation of Per- and Polyfluoroalkyl Substances in

Off-Base Drinking Water—

Outlying Landing Field Coupeville

Station ID	WI-CV-1RW92	WI-CV-2RW02		WI-CV-2RW04		WI-CV-2RW06		WI-CV-3RW07	
Sample ID	WI-CV-1RW92-0720	WI-CV-2RW02-1019	WI-CV-2RW02-0520	WI-CV-2RW04-1019	WI-CV-2RW04-0520	WI-CV-2RW06-1019	WI-CV-2RW06-0520	WI-CV-3RW07-1019	WI-CV-3RW07-0520
Sample Date	07/31/20	10/30/19	05/22/20	10/31/19	05/18/20	10/30/19	05/18/20	10/30/19	05/26/20
Chemical Name									
Semivolatile Organic Compounds (UG/L)									
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	2.02 U	9.74 U	2 U	10.1 U	2.01 U	10.2 U	2.04 U	10.5 U	2.06 U
Perfluorooctane Sulfonate (PFOS)	2.02 U	9.74 U	2 U	13.4	13.2	10.2 U	2.04 U	10.5 U	2.50
Perfluorohexanoic Acid (PFHxA)	2.02 U	102	63.9	4.12 J	1.16 J	104	103	10.5 U	2.06 U
Perfluorooctanoic acid (PFOA)	2.02 U	212	231	9.19 J	3.99	165	153	10.5 U	2.15
Perfluorohexanesulfonic acid (PFHxS)	2.02 U	37.5	49.6	19.9	16.3	26.7	26.8	10.5 U	2.06 U
Perfluorobutanesulfonic acid (PFBS)	2.02 U	18.8	18.1	19.4	12.8	28.0	24.2	10.5 U	2.06 U
Perfluoroheptanoic acid (PFHpA)	2.02 U	22.7	16.6	2.23 J	2.01 U	18.3	14.0	10.5 U	2.06 U

Notes:

Shading indicates detections

Bold indicates detection above LHA

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

NG/L - Micrograms per liter

DD - Analyte reported at a dilution

All analytes not shown in table were not detected in any samples from location associated with OLF Coupeville

Detections of PFAS in Drinking Water

Coupeville

Results of Investigation of Per- and Polyfluoroalkyl Substances in
Off-Base Drinking Water—
Outlying Landing Field Coupeville

Station ID	WI-CV-3RW10		WI-CV-3RW11			WI-CV-3RW17		WI-CV-3RW18		
Sample ID	WI-CV-3RW10-1019	WI-CV-3RW10-0520	WI-CV-3RW11-1019	WI-CV-3RW11-0520	WI-CV-3RW11P-0520	WI-CV-3RW17-1119	WI-CV-3RW17-0520	WI-CV-3RW18-1119	WI-CV-3RW18P-1119	WI-CV-3RW18-05020
Sample Date	10/30/19	05/18/20	10/30/19	05/20/20	05/20/20	11/01/19	05/20/20	11/08/19	11/08/19	05/20/20
Chemical Name										
Semivolatile Organic Compounds (UG/L)										
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	10.4 U	1.95 U	10.3 U	2.1 U	2.02 U	10.6 U	2 U	10.1 U	10.2 U	2.01 U
Perfluorooctane Sulfonate (PFOS)	10.4 U	2.15	10.3 U	1.49 J	1.49 J	10.6 U	2 U	10.1 U	10.2 U	2.01 U
Perfluorohexanoic Acid (PFHxA)	168	210	127	105	107	10.6 U	2 U	10.1 U	10.2 U	2.01 U
Perfluorooctanoic acid (PFOA)	77.7	95.7	425	295	296	10.6 U	2 U	10.1 U	10.2 U	2.01 U
Perfluorohexanesulfonic acid (PFHxS)	76.6	87.1	86.2	97.1	97.4	10.6 U	2 U	10.1 U	10.2 U	2.01 U
Perfluorobutanesulfonic acid (PFBS)	167	203	46.7	42.8	42.8	10.6 U	2 U	10.1 U	10.2 U	2.01 U
Perfluoroheptanoic acid (PFHpA)	18.7	17.7	27.1	17.6	16.8	10.6 U	2 U	10.1 U	10.2 U	2.01 U

Notes:

Shading indicates detections

Bold indicates detection above LHA

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

NG/L - Micrograms per liter

DD - Analyte reported at a dilution

All analytes not shown in table were not detected in any samples from location associated with OLF Coupeville

Attachment 3
Data Validation Summary Reports

**DATA VALIDATION SUMMARY REPORT
NAS WHIDBEY ISLAND, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon
 SDG: 1903877
 Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
 Site: NAS Whidbey Island, Residential Wells, CTO-4470, Washington
 Date: January 15, 2020

PFAS			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-CV-1RW72-1019	1903877-01	Water
2	WI-CV-1FB72-1019	1903877-02	Water
3	WI-AF-3RW41-1019	1903877-03	Water
4	WI-AF-3FB41-1019	1903877-04	Water
5	WI-AF-1RW51-1019	1903877-05	Water
6	WI-AF-1FB51-1019	1903877-06	Water
7	WI-A06-RW18-1019	1903877-07	Water
8	WI-A06-FB18-1019	1903877-08	Water
9	WI-A06-RW24-1019	1903877-09	Water
10	WI-A06-FB24-1019	1903877-10	Water
11	WI-A06-RW24P-1019	1903877-11	Water
12	WI-CV-3RW07-1019	1903877-12	Water
13	WI-CV-3FB07-1019	1903877-13	Water
14	WI-CV-3RW10-1019	1903877-14	Water
15	WI-CV-3FB10-1019	1903877-15	Water
16	WI-CV-3RW11-1019	1903877-16	Water
17	WI-CV-3FB11-1019	1903877-17	Water
18	WI-CV-1RW34-1019	1903877-18	Water
19	WI-CV-1FB34-1019	1903877-19	Water
20	WI-CV-2RW06-1019	1903877-20	Water

A full data validation was performed on the analytical data for eleven water samples and nine aqueous field blank samples collected on October 29-30, 2019 by CH2M Hill at the NAS Whidbey Island site in Washington. The samples were analyzed under the EPA Method “Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)”.

Specific method references are as follows:

Analysis
PFAS

Method References
USEPA Method 537.1

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, DoD Final General Data Validation Guidelines, November 2019, and the USEPA Data Review and Validation Guidelines as follows:

- The USEPA “Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537,” November 2018;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 10% of the detected results in the samples.

Data Usability Assessment

There were no serious deficiencies of data.

Overall the data are acceptable for the intended purposes. There were no qualifications.

Perfluorinated Alkyl Substances (PFAS)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC sample results are summarized in the table below.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WI-CV-1FB72-1019	None - ND	-	-	-
WI-AF-3FB41-1019	None - ND	-	-	-
WI-AF-1FB51-1019	None - ND	-	-	-
WI-A06-FB18-1019	None - ND	-	-	-
WI-A06-FB24-1019	None - ND	-	-	-
WI-CV-3FB07-1019	None - ND	-	-	-
WI-CV-3FB10-1019	None - ND	-	-	-
WI-CV-3FB11-1019	None - ND	-	-	-
WI-CV-1FB34-1019	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- MS/MSD samples were not analyzed.

Laboratory Control Samples (LCS)

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- EDS Samples 11 and 16 were analyzed at a 5X dilution for various compounds due to a high concentration of target compounds. The reporting limits were adjusted accordingly. No action was required.

Field Duplicate Sample Precision

- Field duplicate results are summarized below. The precision was acceptable.

Compound	WI-A06-RW24-1019 ng/L	WI-A06-RW24P-1019 ng/L	RPD	Qualifier
PFBS	25.7	29.8	17%	None
PFHxA	49.1	47.0	15%	
PFHpA	7.10	8.43	4%	
PFHxS	381	429	17%	
PFOA	53.0	50.9	12%	
PFOS	203	225	4%	

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed:

Nancy Weaver
Nancy Weaver
Senior Chemist

Dated: 1/19/20

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

Sample ID: WI-CV-1RW72-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903877-01	Column:	BEH C18
Project:	9000NVT3	Date Collected:	29-Oct-19 09:05	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	1.91	1.50	5.00	9.98	J	B9K0020	05-Nov-19	0.250 L	06-Nov-19 17:55	1
PFHxA	307-24-4	2.02	1.50	5.00	9.98	J	B9K0020	05-Nov-19	0.250 L	06-Nov-19 17:55	1
PFHpA	375-85-9	ND	1.50	5.00	9.98		B9K0020	05-Nov-19	0.250 L	06-Nov-19 17:55	1
PFHxS	355-46-4	ND	1.50	5.00	9.98		B9K0020	05-Nov-19	0.250 L	06-Nov-19 17:55	1
PFOA	335-67-1	ND	1.50	5.00	9.98		B9K0020	05-Nov-19	0.250 L	06-Nov-19 17:55	1
PFNA	375-95-1	ND	1.50	5.00	9.98		B9K0020	05-Nov-19	0.250 L	06-Nov-19 17:55	1
PFOS	1763-23-1	ND	1.50	7.00	9.98		B9K0020	05-Nov-19	0.250 L	06-Nov-19 17:55	1
PFDA	335-76-2	ND	1.50	5.00	9.98		B9K0020	05-Nov-19	0.250 L	06-Nov-19 17:55	1
MeFOSAA	2355-31-9	ND	1.50	5.00	9.98		B9K0020	05-Nov-19	0.250 L	06-Nov-19 17:55	1
EtFOSAA	2991-50-6	ND	1.50	5.00	9.98		B9K0020	05-Nov-19	0.250 L	06-Nov-19 17:55	1
PFUnA	2058-94-8	ND	1.50	5.00	9.98		B9K0020	05-Nov-19	0.250 L	06-Nov-19 17:55	1
PFDoA	307-55-1	ND	1.50	5.00	9.98		B9K0020	05-Nov-19	0.250 L	06-Nov-19 17:55	1
PFTTrDA	72629-94-8	ND	1.50	5.00	9.98		B9K0020	05-Nov-19	0.250 L	06-Nov-19 17:55	1
PFTeDA	376-06-7	ND	1.50	5.00	9.98		B9K0020	05-Nov-19	0.250 L	06-Nov-19 17:55	1
HFPO-DA	13252-13-6	ND	1.50	5.00	9.98		B9K0020	05-Nov-19	0.250 L	06-Nov-19 17:55	1
ADONA	919005-14-4	ND	1.50	5.00	9.98		B9K0020	05-Nov-19	0.250 L	06-Nov-19 17:55	1
9CI-PF3ONS	756426-58-1	ND	1.50	5.00	9.98		B9K0020	05-Nov-19	0.250 L	06-Nov-19 17:55	1
11CI-PF3OUdS	763051-92-9	ND	1.50	5.00	9.98		B9K0020	05-Nov-19	0.250 L	06-Nov-19 17:55	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	101	70 - 130			B9K0020	05-Nov-19	0.250 L	06-Nov-19 17:55	1	
13C2-PFDA	SURR	99.5	70 - 130			B9K0020	05-Nov-19	0.250 L	06-Nov-19 17:55	1	
d5-EtFOSAA	SURR	93.7	70 - 130			B9K0020	05-Nov-19	0.250 L	06-Nov-19 17:55	1	
13C3-HFPO-DA	SURR	109	70 - 130			B9K0020	05-Nov-19	0.250 L	06-Nov-19 17:55	1	

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL

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

NW 11/15/20

Sample ID: WI-CV-1FB72-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903877-02	Column:	BEH C18
Project:	9000NVT3	Date Collected:	29-Oct-19 09:05	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.47	4.92	9.83		B9K0020	05-Nov-19	0.254 L	06-Nov-19 18:05	1
PFHxA	307-24-4	ND	1.47	4.92	9.83		B9K0020	05-Nov-19	0.254 L	06-Nov-19 18:05	1
PFHpA	375-85-9	ND	1.47	4.92	9.83		B9K0020	05-Nov-19	0.254 L	06-Nov-19 18:05	1
PFHxS	355-46-4	ND	1.47	4.92	9.83		B9K0020	05-Nov-19	0.254 L	06-Nov-19 18:05	1
PFOA	335-67-1	ND	1.47	4.92	9.83		B9K0020	05-Nov-19	0.254 L	06-Nov-19 18:05	1
PFNA	375-95-1	ND	1.47	4.92	9.83		B9K0020	05-Nov-19	0.254 L	06-Nov-19 18:05	1
PFOS	1763-23-1	ND	1.47	6.89	9.83		B9K0020	05-Nov-19	0.254 L	06-Nov-19 18:05	1
PFDA	335-76-2	ND	1.47	4.92	9.83		B9K0020	05-Nov-19	0.254 L	06-Nov-19 18:05	1
MeFOSAA	2355-31-9	ND	1.47	4.92	9.83		B9K0020	05-Nov-19	0.254 L	06-Nov-19 18:05	1
EtFOSAA	2991-50-6	ND	1.47	4.92	9.83		B9K0020	05-Nov-19	0.254 L	06-Nov-19 18:05	1
PFUnA	2058-94-8	ND	1.47	4.92	9.83		B9K0020	05-Nov-19	0.254 L	06-Nov-19 18:05	1
PFDoA	307-55-1	ND	1.47	4.92	9.83		B9K0020	05-Nov-19	0.254 L	06-Nov-19 18:05	1
PFTTrDA	72629-94-8	ND	1.47	4.92	9.83		B9K0020	05-Nov-19	0.254 L	06-Nov-19 18:05	1
PFTeDA	376-06-7	ND	1.47	4.92	9.83		B9K0020	05-Nov-19	0.254 L	06-Nov-19 18:05	1
HFPO-DA	13252-13-6	ND	1.47	4.92	9.83		B9K0020	05-Nov-19	0.254 L	06-Nov-19 18:05	1
ADONA	919005-14-4	ND	1.47	4.92	9.83		B9K0020	05-Nov-19	0.254 L	06-Nov-19 18:05	1
9CI-PF3ONS	756426-58-1	ND	1.47	4.92	9.83		B9K0020	05-Nov-19	0.254 L	06-Nov-19 18:05	1
11CI-PF3OUdS	763051-92-9	ND	1.47	4.92	9.83		B9K0020	05-Nov-19	0.254 L	06-Nov-19 18:05	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	109	70 - 130		B9K0020	05-Nov-19	0.254 L	06-Nov-19 18:05	1
13C2-PFDA	SURR	104	70 - 130		B9K0020	05-Nov-19	0.254 L	06-Nov-19 18:05	1
d5-EtFOSAA	SURR	103	70 - 130		B9K0020	05-Nov-19	0.254 L	06-Nov-19 18:05	1
13C3-HFPO-DA	SURR	117	70 - 130		B9K0020	05-Nov-19	0.254 L	06-Nov-19 18:05	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

nw11/5/20

Sample ID: WI-AF-3RW41-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903877-03	Column:	BEH C18
Project:	9000NVT3	Date Collected:	29-Oct-19 13:05	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	56.9	1.52	5.08	10.2		B9K0020	05-Nov-19	0.246 L	06-Nov-19 18:16	1
PFHxA	307-24-4	15.3	1.52	5.08	10.2		B9K0020	05-Nov-19	0.246 L	06-Nov-19 18:16	1
PFHpA	375-85-9	3.44	1.52	5.08	10.2	J	B9K0020	05-Nov-19	0.246 L	06-Nov-19 18:16	1
PFHxS	355-46-4	41.8	1.52	5.08	10.2		B9K0020	05-Nov-19	0.246 L	06-Nov-19 18:16	1
PFOA	335-67-1	4.78	1.52	5.08	10.2	J	B9K0020	05-Nov-19	0.246 L	06-Nov-19 18:16	1
PFNA	375-95-1	ND	1.52	5.08	10.2		B9K0020	05-Nov-19	0.246 L	06-Nov-19 18:16	1
PFOS	1763-23-1	10.5	1.52	7.11	10.2		B9K0020	05-Nov-19	0.246 L	06-Nov-19 18:16	1
PFDA	335-76-2	ND	1.52	5.08	10.2		B9K0020	05-Nov-19	0.246 L	06-Nov-19 18:16	1
MeFOSAA	2355-31-9	ND	1.52	5.08	10.2		B9K0020	05-Nov-19	0.246 L	06-Nov-19 18:16	1
EtFOSAA	2991-50-6	ND	1.52	5.08	10.2		B9K0020	05-Nov-19	0.246 L	06-Nov-19 18:16	1
PFUnA	2058-94-8	ND	1.52	5.08	10.2		B9K0020	05-Nov-19	0.246 L	06-Nov-19 18:16	1
PFDoA	307-55-1	ND	1.52	5.08	10.2		B9K0020	05-Nov-19	0.246 L	06-Nov-19 18:16	1
PFTTrDA	72629-94-8	ND	1.52	5.08	10.2		B9K0020	05-Nov-19	0.246 L	06-Nov-19 18:16	1
PFTeDA	376-06-7	ND	1.52	5.08	10.2		B9K0020	05-Nov-19	0.246 L	06-Nov-19 18:16	1
HFPO-DA	13252-13-6	ND	1.52	5.08	10.2		B9K0020	05-Nov-19	0.246 L	06-Nov-19 18:16	1
ADONA	919005-14-4	ND	1.52	5.08	10.2		B9K0020	05-Nov-19	0.246 L	06-Nov-19 18:16	1
9CI-PF3ONS	756426-58-1	ND	1.52	5.08	10.2		B9K0020	05-Nov-19	0.246 L	06-Nov-19 18:16	1
11CI-PF3OUdS	763051-92-9	ND	1.52	5.08	10.2		B9K0020	05-Nov-19	0.246 L	06-Nov-19 18:16	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	99.4	70 - 130			B9K0020	05-Nov-19	0.246 L	06-Nov-19 18:16	1	
13C2-PFDA	SURR	97.1	70 - 130			B9K0020	05-Nov-19	0.246 L	06-Nov-19 18:16	1	
d5-EtFOSAA	SURR	95.9	70 - 130			B9K0020	05-Nov-19	0.246 L	06-Nov-19 18:16	1	
13C3-HFPO-DA	SURR	103	70 - 130			B9K0020	05-Nov-19	0.246 L	06-Nov-19 18:16	1	

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

Results reported to the DL.

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

nw 11/15/20

Sample ID: WI-AF-3FB41-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903877-04	Column:	BEH C18
Project:	9000NVT3	Date Collected:	29-Oct-19 13:05	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.50	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:27	1
PFHxA	307-24-4	ND	1.50	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:27	1
PFHpA	375-85-9	ND	1.50	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:27	1
PFHxS	355-46-4	ND	1.50	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:27	1
PFOA	335-67-1	ND	1.50	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:27	1
PFNA	375-95-1	ND	1.50	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:27	1
PFOS	1763-23-1	ND	1.50	7.03	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:27	1
PFDA	335-76-2	ND	1.50	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:27	1
MeFOSAA	2355-31-9	ND	1.50	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:27	1
EtFOSAA	2991-50-6	ND	1.50	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:27	1
PFOA	2058-94-8	ND	1.50	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:27	1
PFDoA	307-55-1	ND	1.50	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:27	1
PFTTrDA	72629-94-8	ND	1.50	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:27	1
PFTeDA	376-06-7	ND	1.50	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:27	1
HFPO-DA	13252-13-6	ND	1.50	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:27	1
ADONA	919005-14-4	ND	1.50	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:27	1
9CI-PF3ONS	756426-58-1	ND	1.50	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:27	1
11CI-PF3OUdS	763051-92-9	ND	1.50	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:27	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	101	70 - 130			B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:27	1	
13C2-PFDA	SURR	97.2	70 - 130			B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:27	1	
d5-EtFOSAA	SURR	99.5	70 - 130			B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:27	1	
13C3-HFPO-DA	SURR	103	70 - 130			B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:27	1	

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL

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

nw1115120

Sample ID: WI-AF-1RW51-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903877-05	Column:	BEH C18
Project:	9000NVT3	Date Collected:	29-Oct-19 13:40	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.61	5.36	10.7		B9K0020	05-Nov-19	0.233 L	06-Nov-19 18:37	1
PFHxA	307-24-4	ND	1.61	5.36	10.7		B9K0020	05-Nov-19	0.233 L	06-Nov-19 18:37	1
PFHpA	375-85-9	ND	1.61	5.36	10.7		B9K0020	05-Nov-19	0.233 L	06-Nov-19 18:37	1
PFHxS	355-46-4	ND	1.61	5.36	10.7		B9K0020	05-Nov-19	0.233 L	06-Nov-19 18:37	1
PFOA	335-67-1	ND	1.61	5.36	10.7		B9K0020	05-Nov-19	0.233 L	06-Nov-19 18:37	1
PFNA	375-95-1	ND	1.61	5.36	10.7		B9K0020	05-Nov-19	0.233 L	06-Nov-19 18:37	1
PFOS	1763-23-1	ND	1.61	7.51	10.7		B9K0020	05-Nov-19	0.233 L	06-Nov-19 18:37	1
PFDA	335-76-2	ND	1.61	5.36	10.7		B9K0020	05-Nov-19	0.233 L	06-Nov-19 18:37	1
MeFOSAA	2355-31-9	ND	1.61	5.36	10.7		B9K0020	05-Nov-19	0.233 L	06-Nov-19 18:37	1
EtFOSAA	2991-50-6	ND	1.61	5.36	10.7		B9K0020	05-Nov-19	0.233 L	06-Nov-19 18:37	1
PFUnA	2058-94-8	ND	1.61	5.36	10.7		B9K0020	05-Nov-19	0.233 L	06-Nov-19 18:37	1
PFDoA	307-55-1	ND	1.61	5.36	10.7		B9K0020	05-Nov-19	0.233 L	06-Nov-19 18:37	1
PFTTrDA	72629-94-8	ND	1.61	5.36	10.7		B9K0020	05-Nov-19	0.233 L	06-Nov-19 18:37	1
PFTeDA	376-06-7	ND	1.61	5.36	10.7		B9K0020	05-Nov-19	0.233 L	06-Nov-19 18:37	1
HFPO-DA	13252-13-6	ND	1.61	5.36	10.7		B9K0020	05-Nov-19	0.233 L	06-Nov-19 18:37	1
ADONA	919005-14-4	ND	1.61	5.36	10.7		B9K0020	05-Nov-19	0.233 L	06-Nov-19 18:37	1
9CI-PF3ONS	756426-58-1	ND	1.61	5.36	10.7		B9K0020	05-Nov-19	0.233 L	06-Nov-19 18:37	1
11CI-PF3OUdS	763051-92-9	ND	1.61	5.36	10.7		B9K0020	05-Nov-19	0.233 L	06-Nov-19 18:37	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102		70 - 130			B9K0020	05-Nov-19	0.233 L	06-Nov-19 18:37	1
13C2-PFDA	SURR	96.2		70 - 130			B9K0020	05-Nov-19	0.233 L	06-Nov-19 18:37	1
d5-EtFOSAA	SURR	94.2		70 - 130			B9K0020	05-Nov-19	0.233 L	06-Nov-19 18:37	1
13C3-HFPO-DA	SURR	102		70 - 130			B9K0020	05-Nov-19	0.233 L	06-Nov-19 18:37	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

nw 11/15/20

Sample ID: WI-AF-1FB51-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903877-06	Column:	BEH C18
Project:	9000NVT3	Date Collected:	29-Oct-19 13:40	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.51	5.02	10.1		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:48	1
PFHxA	307-24-4	ND	1.51	5.02	10.1		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:48	1
PFHpA	375-85-9	ND	1.51	5.02	10.1		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:48	1
PFHxS	355-46-4	ND	1.51	5.02	10.1		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:48	1
PFOA	335-67-1	ND	1.51	5.02	10.1		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:48	1
PFNA	375-95-1	ND	1.51	5.02	10.1		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:48	1
PFOS	1763-23-1	ND	1.51	7.03	10.1		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:48	1
PFDA	335-76-2	ND	1.51	5.02	10.1		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:48	1
MeFOSAA	2355-31-9	ND	1.51	5.02	10.1		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:48	1
EtFOSAA	2991-50-6	ND	1.51	5.02	10.1		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:48	1
PFUnA	2058-94-8	ND	1.51	5.02	10.1		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:48	1
PFDoA	307-55-1	ND	1.51	5.02	10.1		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:48	1
PFTTrDA	72629-94-8	ND	1.51	5.02	10.1		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:48	1
PFTeDA	376-06-7	ND	1.51	5.02	10.1		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:48	1
HFPO-DA	13252-13-6	ND	1.51	5.02	10.1		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:48	1
ADONA	919005-14-4	ND	1.51	5.02	10.1		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:48	1
9CI-PF3ONS	756426-58-1	ND	1.51	5.02	10.1		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:48	1
11CI-PF3OUdS	763051-92-9	ND	1.51	5.02	10.1		B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:48	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	97.0	70 - 130			B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:48	1	
13C2-PFDA	SURR	98.5	70 - 130			B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:48	1	
d5-EtFOSAA	SURR	99.1	70 - 130			B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:48	1	
13C3-HFPO-DA	SURR	98.0	70 - 130			B9K0020	05-Nov-19	0.249 L	06-Nov-19 18:48	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL

LOQ - Limit of quantitation

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

new 11/15/20

Sample ID: WI-A06-RW18-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903877-07	Column:	BEH C18
Project:	9000NVT3	Date Collected:	29-Oct-19 15:20	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	22.6	1.55	5.17	10.3		B9K0020	05-Nov-19	0.242 L	06-Nov-19 18:59	1
PFHxA	307-24-4	29.1	1.55	5.17	10.3		B9K0020	05-Nov-19	0.242 L	06-Nov-19 18:59	1
PFHpA	375-85-9	8.64	1.55	5.17	10.3	J	B9K0020	05-Nov-19	0.242 L	06-Nov-19 18:59	1
PFHxS	355-46-4	78.2	1.55	5.17	10.3		B9K0020	05-Nov-19	0.242 L	06-Nov-19 18:59	1
PFOA	335-67-1	24.5	1.55	5.17	10.3		B9K0020	05-Nov-19	0.242 L	06-Nov-19 18:59	1
PFNA	375-95-1	ND	1.55	5.17	10.3		B9K0020	05-Nov-19	0.242 L	06-Nov-19 18:59	1
PFOS	1763-23-1	12.6	1.55	7.23	10.3		B9K0020	05-Nov-19	0.242 L	06-Nov-19 18:59	1
PFDA	335-76-2	ND	1.55	5.17	10.3		B9K0020	05-Nov-19	0.242 L	06-Nov-19 18:59	1
MeFOSAA	2355-31-9	ND	1.55	5.17	10.3		B9K0020	05-Nov-19	0.242 L	06-Nov-19 18:59	1
EtFOSAA	2991-50-6	ND	1.55	5.17	10.3		B9K0020	05-Nov-19	0.242 L	06-Nov-19 18:59	1
PFUnA	2058-94-8	ND	1.55	5.17	10.3		B9K0020	05-Nov-19	0.242 L	06-Nov-19 18:59	1
PFDoA	307-55-1	ND	1.55	5.17	10.3		B9K0020	05-Nov-19	0.242 L	06-Nov-19 18:59	1
PFTTrDA	72629-94-8	ND	1.55	5.17	10.3		B9K0020	05-Nov-19	0.242 L	06-Nov-19 18:59	1
PFTeDA	376-06-7	ND	1.55	5.17	10.3		B9K0020	05-Nov-19	0.242 L	06-Nov-19 18:59	1
HFPO-DA	13252-13-6	ND	1.55	5.17	10.3		B9K0020	05-Nov-19	0.242 L	06-Nov-19 18:59	1
ADONA	919005-14-4	ND	1.55	5.17	10.3		B9K0020	05-Nov-19	0.242 L	06-Nov-19 18:59	1
9CI-PF3ONS	756426-58-1	ND	1.55	5.17	10.3		B9K0020	05-Nov-19	0.242 L	06-Nov-19 18:59	1
11CI-PF3OUdS	763051-92-9	ND	1.55	5.17	10.3		B9K0020	05-Nov-19	0.242 L	06-Nov-19 18:59	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130		B9K0020	05-Nov-19	0.242 L	06-Nov-19 18:59	1
13C2-PFDA	SURR	106	70 - 130		B9K0020	05-Nov-19	0.242 L	06-Nov-19 18:59	1
d5-EtFOSAA	SURR	82.3	70 - 130		B9K0020	05-Nov-19	0.242 L	06-Nov-19 18:59	1
13C3-HFPO-DA	SURR	103	70 - 130		B9K0020	05-Nov-19	0.242 L	06-Nov-19 18:59	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL

LOQ - Limit of quantitation

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

nr/11/15/20

Sample ID: WI-A06-FB18-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903877-08	Column:	BEH C18
Project:	9000NVT3	Date Collected:	29-Oct-19 15:20	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.52	5.08	10.1		B9K0020	05-Nov-19	0.246 L	06-Nov-19 19:09	1
PFHxA	307-24-4	ND	1.52	5.08	10.1		B9K0020	05-Nov-19	0.246 L	06-Nov-19 19:09	1
PFHpA	375-85-9	ND	1.52	5.08	10.1		B9K0020	05-Nov-19	0.246 L	06-Nov-19 19:09	1
PFHxS	355-46-4	ND	1.52	5.08	10.1		B9K0020	05-Nov-19	0.246 L	06-Nov-19 19:09	1
PFOA	335-67-1	ND	1.52	5.08	10.1		B9K0020	05-Nov-19	0.246 L	06-Nov-19 19:09	1
PFNA	375-95-1	ND	1.52	5.08	10.1		B9K0020	05-Nov-19	0.246 L	06-Nov-19 19:09	1
PFOS	1763-23-1	ND	1.52	7.11	10.1		B9K0020	05-Nov-19	0.246 L	06-Nov-19 19:09	1
PFDA	335-76-2	ND	1.52	5.08	10.1		B9K0020	05-Nov-19	0.246 L	06-Nov-19 19:09	1
MeFOSAA	2355-31-9	ND	1.52	5.08	10.1		B9K0020	05-Nov-19	0.246 L	06-Nov-19 19:09	1
EtFOSAA	2991-50-6	ND	1.52	5.08	10.1		B9K0020	05-Nov-19	0.246 L	06-Nov-19 19:09	1
PFUnA	2058-94-8	ND	1.52	5.08	10.1		B9K0020	05-Nov-19	0.246 L	06-Nov-19 19:09	1
PFDoA	307-55-1	ND	1.52	5.08	10.1		B9K0020	05-Nov-19	0.246 L	06-Nov-19 19:09	1
PFTTrDA	72629-94-8	ND	1.52	5.08	10.1		B9K0020	05-Nov-19	0.246 L	06-Nov-19 19:09	1
PFTeDA	376-06-7	ND	1.52	5.08	10.1		B9K0020	05-Nov-19	0.246 L	06-Nov-19 19:09	1
HFPO-DA	13252-13-6	ND	1.52	5.08	10.1		B9K0020	05-Nov-19	0.246 L	06-Nov-19 19:09	1
ADONA	919005-14-4	ND	1.52	5.08	10.1		B9K0020	05-Nov-19	0.246 L	06-Nov-19 19:09	1
9Cl-PF3ONS	756426-58-1	ND	1.52	5.08	10.1		B9K0020	05-Nov-19	0.246 L	06-Nov-19 19:09	1
11Cl-PF3OUdS	763051-92-9	ND	1.52	5.08	10.1		B9K0020	05-Nov-19	0.246 L	06-Nov-19 19:09	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	105	70 - 130			B9K0020	05-Nov-19	0.246 L	06-Nov-19 19:09	1	
13C2-PFDA	SURR	102	70 - 130			B9K0020	05-Nov-19	0.246 L	06-Nov-19 19:09	1	
d5-EtFOSAA	SURR	94.8	70 - 130			B9K0020	05-Nov-19	0.246 L	06-Nov-19 19:09	1	
13C3-HFPO-DA	SURR	99.6	70 - 130			B9K0020	05-Nov-19	0.246 L	06-Nov-19 19:09	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw 11/15/20

Sample ID: WI-A06-RW24-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903877-09	Column:	BEH C18
Project:	9000NVT3	Date Collected:	29-Oct-19 16:15	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	25.7	1.62	5.41	10.8		B9K0020	05-Nov-19	0.231 L	06-Nov-19 19:20	1
PFHxA	307-24-4	49.1	1.62	5.41	10.8		B9K0020	05-Nov-19	0.231 L	06-Nov-19 19:20	1
PFHpA	375-85-9	7.10	1.62	5.41	10.8	J	B9K0020	05-Nov-19	0.231 L	06-Nov-19 19:20	1
PFHxS	355-46-4	381	1.62	5.41	10.8		B9K0020	05-Nov-19	0.231 L	06-Nov-19 19:20	1
PFOA	335-67-1	53.0	1.62	5.41	10.8		B9K0020	05-Nov-19	0.231 L	06-Nov-19 19:20	1
PFNA	375-95-1	ND	1.62	5.41	10.8		B9K0020	05-Nov-19	0.231 L	06-Nov-19 19:20	1
PFOS	1763-23-1	203	1.62	7.58	10.8		B9K0020	05-Nov-19	0.231 L	06-Nov-19 19:20	1
PFDA	335-76-2	ND	1.62	5.41	10.8		B9K0020	05-Nov-19	0.231 L	06-Nov-19 19:20	1
MeFOSAA	2355-31-9	ND	1.62	5.41	10.8		B9K0020	05-Nov-19	0.231 L	06-Nov-19 19:20	1
EtFOSAA	2991-50-6	ND	1.62	5.41	10.8		B9K0020	05-Nov-19	0.231 L	06-Nov-19 19:20	1
PFUnA	2058-94-8	ND	1.62	5.41	10.8		B9K0020	05-Nov-19	0.231 L	06-Nov-19 19:20	1
PFDoA	307-55-1	ND	1.62	5.41	10.8		B9K0020	05-Nov-19	0.231 L	06-Nov-19 19:20	1
PFTTrDA	72629-94-8	ND	1.62	5.41	10.8		B9K0020	05-Nov-19	0.231 L	06-Nov-19 19:20	1
PFTeDA	376-06-7	ND	1.62	5.41	10.8		B9K0020	05-Nov-19	0.231 L	06-Nov-19 19:20	1
HFPO-DA	13252-13-6	ND	1.62	5.41	10.8		B9K0020	05-Nov-19	0.231 L	06-Nov-19 19:20	1
ADONA	919005-14-4	ND	1.62	5.41	10.8		B9K0020	05-Nov-19	0.231 L	06-Nov-19 19:20	1
9CI-PF3ONS	756426-58-1	ND	1.62	5.41	10.8		B9K0020	05-Nov-19	0.231 L	06-Nov-19 19:20	1
11CI-PF3OUdS	763051-92-9	ND	1.62	5.41	10.8		B9K0020	05-Nov-19	0.231 L	06-Nov-19 19:20	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	108	70 - 130			B9K0020	05-Nov-19	0.231 L	06-Nov-19 19:20	1	
13C2-PFDA	SURR	113	70 - 130			B9K0020	05-Nov-19	0.231 L	06-Nov-19 19:20	1	
d5-EtFOSAA	SURR	91.1	70 - 130			B9K0020	05-Nov-19	0.231 L	06-Nov-19 19:20	1	
13C3-HFPO-DA	SURR	106	70 - 130			B9K0020	05-Nov-19	0.231 L	06-Nov-19 19:20	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw 11/1/20

Sample ID: WI-A06-FB24-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903877-10	Column:	BEH C18
Project:	9000NVT3	Date Collected:	29-Oct-19 16:15	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.49	4.96	9.92		B9K0020	05-Nov-19	0.252 L	06-Nov-19 19:30	1
PFHxA	307-24-4	ND	1.49	4.96	9.92		B9K0020	05-Nov-19	0.252 L	06-Nov-19 19:30	1
PFHpA	375-85-9	ND	1.49	4.96	9.92		B9K0020	05-Nov-19	0.252 L	06-Nov-19 19:30	1
PFHxS	355-46-4	ND	1.49	4.96	9.92		B9K0020	05-Nov-19	0.252 L	06-Nov-19 19:30	1
PFOA	335-67-1	ND	1.49	4.96	9.92		B9K0020	05-Nov-19	0.252 L	06-Nov-19 19:30	1
PFNA	375-95-1	ND	1.49	4.96	9.92		B9K0020	05-Nov-19	0.252 L	06-Nov-19 19:30	1
PFOS	1763-23-1	ND	1.49	6.94	9.92		B9K0020	05-Nov-19	0.252 L	06-Nov-19 19:30	1
PFDA	335-76-2	ND	1.49	4.96	9.92		B9K0020	05-Nov-19	0.252 L	06-Nov-19 19:30	1
MeFOSAA	2355-31-9	ND	1.49	4.96	9.92		B9K0020	05-Nov-19	0.252 L	06-Nov-19 19:30	1
EtFOSAA	2991-50-6	ND	1.49	4.96	9.92		B9K0020	05-Nov-19	0.252 L	06-Nov-19 19:30	1
PFUnA	2058-94-8	ND	1.49	4.96	9.92		B9K0020	05-Nov-19	0.252 L	06-Nov-19 19:30	1
PFDoA	307-55-1	ND	1.49	4.96	9.92		B9K0020	05-Nov-19	0.252 L	06-Nov-19 19:30	1
PFTTrDA	72629-94-8	ND	1.49	4.96	9.92		B9K0020	05-Nov-19	0.252 L	06-Nov-19 19:30	1
PFTeDA	376-06-7	ND	1.49	4.96	9.92		B9K0020	05-Nov-19	0.252 L	06-Nov-19 19:30	1
HFPO-DA	13252-13-6	ND	1.49	4.96	9.92		B9K0020	05-Nov-19	0.252 L	06-Nov-19 19:30	1
ADONA	919005-14-4	ND	1.49	4.96	9.92		B9K0020	05-Nov-19	0.252 L	06-Nov-19 19:30	1
9CI-PF3ONS	756426-58-1	ND	1.49	4.96	9.92		B9K0020	05-Nov-19	0.252 L	06-Nov-19 19:30	1
11CI-PF3OUdS	763051-92-9	ND	1.49	4.96	9.92		B9K0020	05-Nov-19	0.252 L	06-Nov-19 19:30	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105		70 - 130			B9K0020	05-Nov-19	0.252 L	06-Nov-19 19:30	1
13C2-PFDA	SURR	98.0		70 - 130			B9K0020	05-Nov-19	0.252 L	06-Nov-19 19:30	1
d5-EtFOSAA	SURR	96.3		70 - 130			B9K0020	05-Nov-19	0.252 L	06-Nov-19 19:30	1
13C3-HFPO-DA	SURR	112		70 - 130			B9K0020	05-Nov-19	0.252 L	06-Nov-19 19:30	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL

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

nw11/15/20

Sample ID: WI-A06-RW24P-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903877-11	Column:	BEH C18
Project:	9000NVT3	Date Collected:	29-Oct-19 16:20	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	29.8	1.57	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:13	1
PFHxA	307-24-4	47.0	1.57	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:13	1
PFHpA	375-85-9	8.43	1.57	5.25	10.5	J	B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:13	1
PFHxS	355-46-4	429	7.87	26.3	52.5	Ø	B9K0020	05-Nov-19	0.238 L	07-Nov-19 16:31	5
PFOA	335-67-1	50.9	1.57	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:13	1
PFNA	375-95-1	ND	1.57	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:13	1
PFOS	1763-23-1	225	1.57	7.35	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:13	1
PFDA	335-76-2	ND	1.57	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:13	1
MeFOSAA	2355-31-9	ND	1.57	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:13	1
EtFOSAA	2991-50-6	ND	1.57	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:13	1
PFUnA	2058-94-8	ND	1.57	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:13	1
PFDoA	307-55-1	ND	1.57	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:13	1
PFTrDA	72629-94-8	ND	1.57	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:13	1
PFTeDA	376-06-7	ND	1.57	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:13	1
HFPO-DA	13252-13-6	ND	1.57	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:13	1
ADONA	919005-14-4	ND	1.57	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:13	1
9CI-PF3ONS	756426-53-1	ND	1.57	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:13	1
11CI-PF3OUdS	763051-92-9	ND	1.57	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:13	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	103	70 - 130			B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:13	1	
13C2-PFDA	SURR	97.5	70 - 130			B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:13	1	
d5-EtFOSAA	SURR	88.8	70 - 130			B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:13	1	
13C3-HFPO-DA	SURR	109	70 - 130			B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:13	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL

LOQ - Limit of quantitation

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

11/15/20

Sample ID: WI-CV-3RW07-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903877-12	Column:	BEH C18
Project:	9000NVT3	Date Collected:	30-Oct-19 08:05	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:24	1
PFHxA	307-24-4	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:24	1
PFHpA	375-85-9	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:24	1
PFHxS	355-46-4	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:24	1
PFOA	335-67-1	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:24	1
PFNA	375-95-1	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:24	1
PFOS	1763-23-1	ND	1.58	7.35	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:24	1
PFDA	335-76-2	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:24	1
MeFOSAA	2355-31-9	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:24	1
EtFOSAA	2991-50-6	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:24	1
PFUnA	2058-94-8	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:24	1
PFDoA	307-55-1	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:24	1
PFTTrDA	72629-94-8	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:24	1
PFTeDA	376-06-7	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:24	1
HFPO-DA	13252-13-6	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:24	1
ADONA	919005-14-4	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:24	1
9CI-PF3ONS	756426-58-1	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:24	1
11CI-PF3OUdS	763051-92-9	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:24	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	103	70 - 130			B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:24	1	
13C2-PFDA	SURR	99.6	70 - 130			B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:24	1	
d5-EtFOSAA	SURR	89.4	70 - 130			B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:24	1	
13C3-HFPO-DA	SURR	108	70 - 130			B9K0020	05-Nov-19	0.238 L	06-Nov-19 20:24	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL

LOQ - Limit of quantitation

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

mw 11/15/20

Sample ID: WI-CV-3FB07-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903877-13	Column:	BEH C18
Project:	9000NVT3	Date Collected:	30-Oct-19 08:05	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.51	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 20:34	1
PFHxA	307-24-4	ND	1.51	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 20:34	1
PFHpA	375-85-9	ND	1.51	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 20:34	1
PFHxS	355-46-4	ND	1.51	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 20:34	1
PFOA	335-67-1	ND	1.51	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 20:34	1
PFNA	375-95-1	ND	1.51	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 20:34	1
PFOS	1763-23-1	ND	1.51	7.03	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 20:34	1
PFDA	335-76-2	ND	1.51	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 20:34	1
MeFOSAA	2355-31-9	ND	1.51	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 20:34	1
EtFOSAA	2991-50-6	ND	1.51	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 20:34	1
PFUnA	2058-94-8	ND	1.51	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 20:34	1
PFDoA	307-55-1	ND	1.51	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 20:34	1
PFTTrDA	72629-94-8	ND	1.51	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 20:34	1
PFTeDA	376-06-7	ND	1.51	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 20:34	1
HFPO-DA	13252-13-6	ND	1.51	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 20:34	1
ADONA	919005-14-4	ND	1.51	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 20:34	1
9CI-PF3ONS	756426-58-1	ND	1.51	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 20:34	1
11CI-PF3OUdS	763051-92-9	ND	1.51	5.02	10.0		B9K0020	05-Nov-19	0.249 L	06-Nov-19 20:34	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	105	70 - 130			B9K0020	05-Nov-19	0.249 L	06-Nov-19 20:34	1	
13C2-PFDA	SURR	100	70 - 130			B9K0020	05-Nov-19	0.249 L	06-Nov-19 20:34	1	
d5-EtFOSAA	SURR	99.0	70 - 130			B9K0020	05-Nov-19	0.249 L	06-Nov-19 20:34	1	
13C3-HFPO-DA	SURR	108	70 - 130			B9K0020	05-Nov-19	0.249 L	06-Nov-19 20:34	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw 11/15/20

Sample ID: WI-CV-3RW10-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903877-14	Column:	BEH C18
Project:	9000NVT3	Date Collected:	30-Oct-19 09:05	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	167	1.55	5.19	10.4		B9K0020	05-Nov-19	0.241 L	06-Nov-19 20:45	1
PFHxA	307-24-4	168	1.55	5.19	10.4		B9K0020	05-Nov-19	0.241 L	06-Nov-19 20:45	1
PFHpA	375-85-9	18.7	1.55	5.19	10.4		B9K0020	05-Nov-19	0.241 L	06-Nov-19 20:45	1
PFHxS	355-46-4	76.6	1.55	5.19	10.4		B9K0020	05-Nov-19	0.241 L	06-Nov-19 20:45	1
PFOA	335-67-1	77.7	1.55	5.19	10.4		B9K0020	05-Nov-19	0.241 L	06-Nov-19 20:45	1
PFNA	375-95-1	ND	1.55	5.19	10.4		B9K0020	05-Nov-19	0.241 L	06-Nov-19 20:45	1
PFOS	1763-23-1	ND	1.55	7.26	10.4		B9K0020	05-Nov-19	0.241 L	06-Nov-19 20:45	1
PFDA	335-76-2	ND	1.55	5.19	10.4		B9K0020	05-Nov-19	0.241 L	06-Nov-19 20:45	1
MeFOSAA	2355-31-9	ND	1.55	5.19	10.4		B9K0020	05-Nov-19	0.241 L	06-Nov-19 20:45	1
EtFOSAA	2991-50-6	ND	1.55	5.19	10.4		B9K0020	05-Nov-19	0.241 L	06-Nov-19 20:45	1
PFUnA	2058-94-8	ND	1.55	5.19	10.4		B9K0020	05-Nov-19	0.241 L	06-Nov-19 20:45	1
PFDoA	307-55-1	ND	1.55	5.19	10.4		B9K0020	05-Nov-19	0.241 L	06-Nov-19 20:45	1
PFTTrDA	72629-94-8	ND	1.55	5.19	10.4		B9K0020	05-Nov-19	0.241 L	06-Nov-19 20:45	1
PFTeDA	376-06-7	ND	1.55	5.19	10.4		B9K0020	05-Nov-19	0.241 L	06-Nov-19 20:45	1
HFPO-DA	13252-13-6	ND	1.55	5.19	10.4		B9K0020	05-Nov-19	0.241 L	06-Nov-19 20:45	1
ADONA	919005-14-4	ND	1.55	5.19	10.4		B9K0020	05-Nov-19	0.241 L	06-Nov-19 20:45	1
9CI-PF3ONS	756426-53-1	ND	1.55	5.19	10.4		B9K0020	05-Nov-19	0.241 L	06-Nov-19 20:45	1
11CI-PF3OUdS	763051-92-9	ND	1.55	5.19	10.4		B9K0020	05-Nov-19	0.241 L	06-Nov-19 20:45	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	100	70 - 130		B9K0020	05-Nov-19	0.241 L	06-Nov-19 20:45	1
13C2-PFDA	SURR	102	70 - 130		B9K0020	05-Nov-19	0.241 L	06-Nov-19 20:45	1
d5-EtFOSAA	SURR	94.9	70 - 130		B9K0020	05-Nov-19	0.241 L	06-Nov-19 20:45	1
13C3-HFPO-DA	SURR	107	70 - 130		B9K0020	05-Nov-19	0.241 L	06-Nov-19 20:45	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL

LOQ - Limit of quantitation

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

rw 11/15/20

Sample ID: WI-CV-3FB10-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903877-15	Column:	BEH C18
Project:	9000NVT3	Date Collected:	30-Oct-19 09:05	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.52	5.06	10.1		B9K0020	05-Nov-19	0.247 L	06-Nov-19 20:55	1
PFHxA	307-24-4	ND	1.52	5.06	10.1		B9K0020	05-Nov-19	0.247 L	06-Nov-19 20:55	1
PFHpA	375-85-9	ND	1.52	5.06	10.1		B9K0020	05-Nov-19	0.247 L	06-Nov-19 20:55	1
PFHxS	355-46-4	ND	1.52	5.06	10.1		B9K0020	05-Nov-19	0.247 L	06-Nov-19 20:55	1
PFOA	335-67-1	ND	1.52	5.06	10.1		B9K0020	05-Nov-19	0.247 L	06-Nov-19 20:55	1
PFNA	375-95-1	ND	1.52	5.06	10.1		B9K0020	05-Nov-19	0.247 L	06-Nov-19 20:55	1
PFOS	1763-23-1	ND	1.52	7.09	10.1		B9K0020	05-Nov-19	0.247 L	06-Nov-19 20:55	1
PFDA	335-76-2	ND	1.52	5.06	10.1		B9K0020	05-Nov-19	0.247 L	06-Nov-19 20:55	1
MeFOSAA	2355-31-9	ND	1.52	5.06	10.1		B9K0020	05-Nov-19	0.247 L	06-Nov-19 20:55	1
EtFOSAA	2991-50-6	ND	1.52	5.06	10.1		B9K0020	05-Nov-19	0.247 L	06-Nov-19 20:55	1
PFUnA	2058-94-8	ND	1.52	5.06	10.1		B9K0020	05-Nov-19	0.247 L	06-Nov-19 20:55	1
PFDoA	307-55-1	ND	1.52	5.06	10.1		B9K0020	05-Nov-19	0.247 L	06-Nov-19 20:55	1
PFTTrDA	72629-94-8	ND	1.52	5.06	10.1		B9K0020	05-Nov-19	0.247 L	06-Nov-19 20:55	1
PFTeDA	376-06-7	ND	1.52	5.06	10.1		B9K0020	05-Nov-19	0.247 L	06-Nov-19 20:55	1
HFPO-DA	13252-13-6	ND	1.52	5.06	10.1		B9K0020	05-Nov-19	0.247 L	06-Nov-19 20:55	1
ADONA	919005-14-4	ND	1.52	5.06	10.1		B9K0020	05-Nov-19	0.247 L	06-Nov-19 20:55	1
9CI-PF3ONS	756426-58-1	ND	1.52	5.06	10.1		B9K0020	05-Nov-19	0.247 L	06-Nov-19 20:55	1
11CI-PF3OUdS	763051-92-9	ND	1.52	5.06	10.1		B9K0020	05-Nov-19	0.247 L	06-Nov-19 20:55	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	106	70 - 130			B9K0020	05-Nov-19	0.247 L	06-Nov-19 20:55	1	
13C2-PFDA	SURR	101	70 - 130			B9K0020	05-Nov-19	0.247 L	06-Nov-19 20:55	1	
d5-EtFOSAA	SURR	97.9	70 - 130			B9K0020	05-Nov-19	0.247 L	06-Nov-19 20:55	1	
13C3-HFPO-DA	SURR	106	70 - 130			B9K0020	05-Nov-19	0.247 L	06-Nov-19 20:55	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw/11/120

Sample ID: WI-CV-3RW11-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903877-16	Column:	BEH C18
Project:	9000NVT3	Date Collected:	30-Oct-19 10:10	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	46.7	1.54	5.12	10.3		B9K0020	05-Nov-19	0.244 L	06-Nov-19 21:06	1
PFHxA	307-24-4	127	1.54	5.12	10.3		B9K0020	05-Nov-19	0.244 L	06-Nov-19 21:06	1
PFHpA	375-85-9	27.1	1.54	5.12	10.3		B9K0020	05-Nov-19	0.244 L	06-Nov-19 21:06	1
PFHxS	355-46-4	86.2	1.54	5.12	10.3		B9K0020	05-Nov-19	0.244 L	06-Nov-19 21:06	1
PFOA	335-67-1	425	7.69	25.6	51.3	⊘	B9K0020	05-Nov-19	0.244 L	07-Nov-19 16:42	5
PFNA	375-95-1	ND	1.54	5.12	10.3		B9K0020	05-Nov-19	0.244 L	06-Nov-19 21:06	1
PFOS	1763-23-1	ND	1.54	7.17	10.3		B9K0020	05-Nov-19	0.244 L	06-Nov-19 21:06	1
PFDA	335-76-2	ND	1.54	5.12	10.3		B9K0020	05-Nov-19	0.244 L	06-Nov-19 21:06	1
MeFOSAA	2355-31-9	ND	1.54	5.12	10.3		B9K0020	05-Nov-19	0.244 L	06-Nov-19 21:06	1
EtFOSAA	2991-50-6	ND	1.54	5.12	10.3		B9K0020	05-Nov-19	0.244 L	06-Nov-19 21:06	1
PFUnA	2058-94-8	ND	1.54	5.12	10.3		B9K0020	05-Nov-19	0.244 L	06-Nov-19 21:06	1
PFDoA	307-55-1	ND	1.54	5.12	10.3		B9K0020	05-Nov-19	0.244 L	06-Nov-19 21:06	1
PFTTrDA	72629-94-8	ND	1.54	5.12	10.3		B9K0020	05-Nov-19	0.244 L	06-Nov-19 21:06	1
PFTeDA	376-06-7	ND	1.54	5.12	10.3		B9K0020	05-Nov-19	0.244 L	06-Nov-19 21:06	1
HFPO-DA	13252-13-6	ND	1.54	5.12	10.3		B9K0020	05-Nov-19	0.244 L	06-Nov-19 21:06	1
ADONA	919005-14-4	ND	1.54	5.12	10.3		B9K0020	05-Nov-19	0.244 L	06-Nov-19 21:06	1
9CI-PF3ONS	756426-58-1	ND	1.54	5.12	10.3		B9K0020	05-Nov-19	0.244 L	06-Nov-19 21:06	1
11CI-PF3OUdS	763051-92-9	ND	1.54	5.12	10.3		B9K0020	05-Nov-19	0.244 L	06-Nov-19 21:06	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	109	70 - 130			B9K0020	05-Nov-19	0.244 L	06-Nov-19 21:06	1	
13C2-PFDA	SURR	103	70 - 130			B9K0020	05-Nov-19	0.244 L	06-Nov-19 21:06	1	
d5-EtFOSAA	SURR	76.4	70 - 130			B9K0020	05-Nov-19	0.244 L	06-Nov-19 21:06	1	
13C3-HFPO-DA	SURR	115	70 - 130			B9K0020	05-Nov-19	0.244 L	06-Nov-19 21:06	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw. 1/15/20

Sample ID: WI-CV-3FB11-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903877-17	Column:	BEH C18
Project:	9000NVT3	Date Collected:	30-Oct-19 10:10	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.54	5.14	10.3		B9K0020	05-Nov-19	0.243 L	06-Nov-19 21:17	1
PFHxA	307-24-4	ND	1.54	5.14	10.3		B9K0020	05-Nov-19	0.243 L	06-Nov-19 21:17	1
PFHpA	375-85-9	ND	1.54	5.14	10.3		B9K0020	05-Nov-19	0.243 L	06-Nov-19 21:17	1
PFHxS	355-46-4	ND	1.54	5.14	10.3		B9K0020	05-Nov-19	0.243 L	06-Nov-19 21:17	1
PFOA	335-67-1	ND	1.54	5.14	10.3		B9K0020	05-Nov-19	0.243 L	06-Nov-19 21:17	1
PFNA	375-95-1	ND	1.54	5.14	10.3		B9K0020	05-Nov-19	0.243 L	06-Nov-19 21:17	1
PFOS	1763-23-1	ND	1.54	7.20	10.3		B9K0020	05-Nov-19	0.243 L	06-Nov-19 21:17	1
PFDA	335-76-2	ND	1.54	5.14	10.3		B9K0020	05-Nov-19	0.243 L	06-Nov-19 21:17	1
MeFOSAA	2355-31-9	ND	1.54	5.14	10.3		B9K0020	05-Nov-19	0.243 L	06-Nov-19 21:17	1
EtFOSAA	2991-50-6	ND	1.54	5.14	10.3		B9K0020	05-Nov-19	0.243 L	06-Nov-19 21:17	1
PFUnA	2058-94-8	ND	1.54	5.14	10.3		B9K0020	05-Nov-19	0.243 L	06-Nov-19 21:17	1
PFDoA	307-55-1	ND	1.54	5.14	10.3		B9K0020	05-Nov-19	0.243 L	06-Nov-19 21:17	1
PFTTrDA	72629-94-8	ND	1.54	5.14	10.3		B9K0020	05-Nov-19	0.243 L	06-Nov-19 21:17	1
PFTeDA	376-06-7	ND	1.54	5.14	10.3		B9K0020	05-Nov-19	0.243 L	06-Nov-19 21:17	1
HFPO-DA	13252-13-6	ND	1.54	5.14	10.3		B9K0020	05-Nov-19	0.243 L	06-Nov-19 21:17	1
ADONA	919005-14-4	ND	1.54	5.14	10.3		B9K0020	05-Nov-19	0.243 L	06-Nov-19 21:17	1
9CI-PF3ONS	756426-58-1	ND	1.54	5.14	10.3		B9K0020	05-Nov-19	0.243 L	06-Nov-19 21:17	1
11CI-PF3OUdS	763051-92-9	ND	1.54	5.14	10.3		B9K0020	05-Nov-19	0.243 L	06-Nov-19 21:17	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	108	70 - 130		B9K0020	05-Nov-19	0.243 L	06-Nov-19 21:17	1
13C2-PFDA	SURR	107	70 - 130		B9K0020	05-Nov-19	0.243 L	06-Nov-19 21:17	1
d5-EtFOSAA	SURR	99.1	70 - 130		B9K0020	05-Nov-19	0.243 L	06-Nov-19 21:17	1
13C3-HFPO-DA	SURR	110	70 - 130		B9K0020	05-Nov-19	0.243 L	06-Nov-19 21:17	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw 11/15/20

Sample ID: WI-CV-1RW34-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903877-18	Column:	BEH C18
Project:	9000NVT3	Date Collected:	30-Oct-19 10:40	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	73.1	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 21:27	1
PFHxA	307-24-4	208	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 21:27	1
PFHpA	375-85-9	35.5	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 21:27	1
PFHxS	355-46-4	72.1	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 21:27	1
PFOA	335-67-1	361	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 21:27	1
PFNA	375-95-1	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 21:27	1
PFOS	1763-23-1	ND	1.58	7.35	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 21:27	1
PFDA	335-76-2	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 21:27	1
MeFOSAA	2355-31-9	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 21:27	1
EtFOSAA	2991-50-6	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 21:27	1
PFUnA	2058-94-8	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 21:27	1
PFDoA	307-55-1	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 21:27	1
PFTTrDA	72629-94-8	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 21:27	1
PFTeDA	376-06-7	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 21:27	1
HFPO-DA	13252-13-6	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 21:27	1
ADONA	919005-14-4	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 21:27	1
9CI-PF3ONS	756426-58-1	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 21:27	1
11CI-PF3OUdS	763051-92-9	ND	1.58	5.25	10.5		B9K0020	05-Nov-19	0.238 L	06-Nov-19 21:27	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	110	70 - 130			B9K0020	05-Nov-19	0.238 L	06-Nov-19 21:27	1	
13C2-PFDA	SURR	105	70 - 130			B9K0020	05-Nov-19	0.238 L	06-Nov-19 21:27	1	
d5-EtFOSAA	SURR	90.6	70 - 130			B9K0020	05-Nov-19	0.238 L	06-Nov-19 21:27	1	
13C3-HFPO-DA	SURR	116	70 - 130			B9K0020	05-Nov-19	0.238 L	06-Nov-19 21:27	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL

LOQ - Limit of quantitation

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

nw 11/15/20

Sample ID: WI-CV-1FB34-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903877-19	Column:	BEH C18
Project:	9000NVT3	Date Collected:	30-Oct-19 10:40	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.51	5.04	10.1		B9K0020	05-Nov-19	0.248 L	06-Nov-19 21:38	1
PFHxA	307-24-4	ND	1.51	5.04	10.1		B9K0020	05-Nov-19	0.248 L	06-Nov-19 21:38	1
PFHpA	375-85-9	ND	1.51	5.04	10.1		B9K0020	05-Nov-19	0.248 L	06-Nov-19 21:38	1
PFHxS	355-46-4	ND	1.51	5.04	10.1		B9K0020	05-Nov-19	0.248 L	06-Nov-19 21:38	1
PFOA	335-67-1	ND	1.51	5.04	10.1		B9K0020	05-Nov-19	0.248 L	06-Nov-19 21:38	1
PFNA	375-95-1	ND	1.51	5.04	10.1		B9K0020	05-Nov-19	0.248 L	06-Nov-19 21:38	1
PFOS	1763-23-1	ND	1.51	7.06	10.1		B9K0020	05-Nov-19	0.248 L	06-Nov-19 21:38	1
PFDA	335-76-2	ND	1.51	5.04	10.1		B9K0020	05-Nov-19	0.248 L	06-Nov-19 21:38	1
MeFOSAA	2355-31-9	ND	1.51	5.04	10.1		B9K0020	05-Nov-19	0.248 L	06-Nov-19 21:38	1
EtFOSAA	2991-50-6	ND	1.51	5.04	10.1		B9K0020	05-Nov-19	0.248 L	06-Nov-19 21:38	1
PFUnA	2058-94-8	ND	1.51	5.04	10.1		B9K0020	05-Nov-19	0.248 L	06-Nov-19 21:38	1
PFDoA	307-55-1	ND	1.51	5.04	10.1		B9K0020	05-Nov-19	0.248 L	06-Nov-19 21:38	1
PFTTrDA	72629-94-8	ND	1.51	5.04	10.1		B9K0020	05-Nov-19	0.248 L	06-Nov-19 21:38	1
PFTeDA	376-06-7	ND	1.51	5.04	10.1		B9K0020	05-Nov-19	0.248 L	06-Nov-19 21:38	1
HFPO-DA	13252-13-6	ND	1.51	5.04	10.1		B9K0020	05-Nov-19	0.248 L	06-Nov-19 21:38	1
ADONA	919005-14-4	ND	1.51	5.04	10.1		B9K0020	05-Nov-19	0.248 L	06-Nov-19 21:38	1
9CI-PF3ONS	756426-58-1	ND	1.51	5.04	10.1		B9K0020	05-Nov-19	0.248 L	06-Nov-19 21:38	1
11CI-PF3OUdS	763051-92-9	ND	1.51	5.04	10.1		B9K0020	05-Nov-19	0.248 L	06-Nov-19 21:38	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	105	70 - 130			B9K0020	05-Nov-19	0.248 L	06-Nov-19 21:38	1	
13C2-PFDA	SURR	101	70 - 130			B9K0020	05-Nov-19	0.248 L	06-Nov-19 21:38	1	
d5-EtFOSAA	SURR	96.0	70 - 130			B9K0020	05-Nov-19	0.248 L	06-Nov-19 21:38	1	
13C3-HFPO-DA	SURR	114	70 - 130			B9K0020	05-Nov-19	0.248 L	06-Nov-19 21:38	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw 11/15/20

Sample ID: WI-CV-2RW06-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903877-20	Column:	BEH C18
Project:	9000NVT3	Date Collected:	30-Oct-19 13:05	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	28.0	1.53	5.10	10.2		B9K0020	05-Nov-19	0.245 L	06-Nov-19 21:48	1
PFHxA	307-24-4	104	1.53	5.10	10.2		B9K0020	05-Nov-19	0.245 L	06-Nov-19 21:48	1
PFHpA	375-85-9	18.3	1.53	5.10	10.2		B9K0020	05-Nov-19	0.245 L	06-Nov-19 21:48	1
PFHxS	355-46-4	26.7	1.53	5.10	10.2		B9K0020	05-Nov-19	0.245 L	06-Nov-19 21:48	1
PFOA	335-67-1	165	1.53	5.10	10.2		B9K0020	05-Nov-19	0.245 L	06-Nov-19 21:48	1
PFNA	375-95-1	ND	1.53	5.10	10.2		B9K0020	05-Nov-19	0.245 L	06-Nov-19 21:48	1
PFOS	1763-23-1	ND	1.53	7.14	10.2		B9K0020	05-Nov-19	0.245 L	06-Nov-19 21:48	1
PFDA	335-76-2	ND	1.53	5.10	10.2		B9K0020	05-Nov-19	0.245 L	06-Nov-19 21:48	1
MeFOSAA	2355-31-9	ND	1.53	5.10	10.2		B9K0020	05-Nov-19	0.245 L	06-Nov-19 21:48	1
EtFOSAA	2991-50-6	ND	1.53	5.10	10.2		B9K0020	05-Nov-19	0.245 L	06-Nov-19 21:48	1
PFUnA	2058-94-8	ND	1.53	5.10	10.2		B9K0020	05-Nov-19	0.245 L	06-Nov-19 21:48	1
PFDoA	307-55-1	ND	1.53	5.10	10.2		B9K0020	05-Nov-19	0.245 L	06-Nov-19 21:48	1
PFTrDA	72629-94-8	ND	1.53	5.10	10.2		B9K0020	05-Nov-19	0.245 L	06-Nov-19 21:48	1
PFTeDA	376-06-7	ND	1.53	5.10	10.2		B9K0020	05-Nov-19	0.245 L	06-Nov-19 21:48	1
HFPO-DA	13252-13-6	ND	1.53	5.10	10.2		B9K0020	05-Nov-19	0.245 L	06-Nov-19 21:48	1
ADONA	919005-14-4	ND	1.53	5.10	10.2		B9K0020	05-Nov-19	0.245 L	06-Nov-19 21:48	1
9CI-PF3ONS	756426-58-1	ND	1.53	5.10	10.2		B9K0020	05-Nov-19	0.245 L	06-Nov-19 21:48	1
11CI-PF3OUdS	763051-92-9	ND	1.53	5.10	10.2		B9K0020	05-Nov-19	0.245 L	06-Nov-19 21:48	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	102	70 - 130			B9K0020	05-Nov-19	0.245 L	06-Nov-19 21:48	1	
13C2-PFDA	SURR	97.9	70 - 130			B9K0020	05-Nov-19	0.245 L	06-Nov-19 21:48	1	
d5-EtFOSAA	SURR	97.9	70 - 130			B9K0020	05-Nov-19	0.245 L	06-Nov-19 21:48	1	
13C3-HFPO-DA	SURR	111	70 - 130			B9K0020	05-Nov-19	0.245 L	06-Nov-19 21:48	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw11.5/20

**DATA VALIDATION SUMMARY REPORT
NAS WHIDBEY ISLAND, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon
 SDG: 1903882
 Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
 Site: NAS Whidbey Island, Residential Wells, CTO-4470, Washington
 Date: January 15, 2020

PFAS			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-CV-2FB06-1019	1903882-01	Water
2	WI-CV-2RW02-1019	1903882-02	Water
3	WI-CV-2FB02-1019	1903882-03	Water
4	WI-CV-1RW14-1019	1903882-04	Water
5	WI-CV-1FB14-1019	1903882-05	Water
6	WI-CV-1RW01-1019	1903882-06	Water
7	WI-CV-1FB01-1019	1903882-07	Water
8	WI-CV-1RW27-1019	1903882-08	Water
9	WI-CV-1FB27-1019	1903882-09	Water
10	WI-CV-1RW25-1019	1903882-10	Water
11	WI-CV-1FB25-1019	1903882-11	Water
12	WI-CV-1RW26-1019	1903882-12	Water
13	WI-CV-1FB26-1019	1903882-13	Water
14	WI-CV-1RW24-1019	1903882-14	Water
15	WI-CV-1FB24-1019	1903882-15	Water
16	WI-CV-1RW23-1019	1903882-16	Water
17	WI-CV-1FB23-1019	1903882-17	Water

A full data validation was performed on the analytical data for eight water samples and nine aqueous field blank samples collected on October 30-31, 2019 by CH2M Hill at the NAS Whidbey Island site in Washington. The samples were analyzed under the EPA Method “Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)”.

Specific method references are as follows:

Analysis
PFAS

Method References
USEPA Method 537.1

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, DoD Final General Data Validation Guidelines, November 2019, and the USEPA Data Review and Validation Guidelines as follows:

- The USEPA “Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537,” November 2018;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 10% of the detected results in the samples.

Data Usability Assessment

There were no serious deficiencies of data.

Overall the data are acceptable for the intended purposes. There were no qualifications.

Perfluorinated Alkyl Substances (PFAS)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC sample results are summarized in the table below.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WI-CV-2FB06-1019	None - ND	-	-	-
WI-CV-2FB02-1019	None - ND	-	-	-
WI-CV-1FB14-1019	None - ND	-	-	-
WI-CV-1FB01-1019	None - ND	-	-	-
WI-CV-1FB27-1019	None - ND	-	-	-
WI-CV-1FB25-1019	None - ND	-	-	-
WI-CV-1FB26-1019	None - ND	-	-	-
WI-CV-1FB24-1019	None - ND	-	-	-
WI-CV-1FB23-1019	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- MS/MSD samples were not analyzed.

Laboratory Control Samples (LCS)

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- EDS Sample 6 was analyzed at a 5X dilution due to a high concentration of PFHxS. The reporting limits were adjusted accordingly. No action was required.

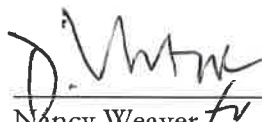
Field Duplicate Sample Precision

- Field duplicate results are summarized below. The precision was acceptable.

Compound	WI-CV-1RW23-1019 ng/L	WI-CV-1RW23P-1019 ng/L	RPD	Qualifier
PFBS	17.5	17.2	2%	None
PFHxA	41.4	39.9	4%	
PFHpA	10.6	10.3	3%	
PFHxS	59.3	61.9	4%	
PFOA	62.5	63.5	2%	

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed:



Nancy Weaver
Senior Chemist

Dated: 1/28/20

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

Sample ID: WI-CV-2FB06-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903882-01	Column:	BEH C18
Project:	9000NVT3	Date Collected:	30-Oct-19 13:05	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.47	4.92	9.83		B9K0019	06-Nov-19	0.254 L	07-Nov-19 18:49	1
PFHxA	307-24-4	ND	1.47	4.92	9.83		B9K0019	06-Nov-19	0.254 L	07-Nov-19 18:49	1
PFHpA	375-85-9	ND	1.47	4.92	9.83		B9K0019	06-Nov-19	0.254 L	07-Nov-19 18:49	1
PFHxS	355-46-4	ND	1.47	4.92	9.83		B9K0019	06-Nov-19	0.254 L	07-Nov-19 18:49	1
PFOA	335-67-1	ND	1.47	4.92	9.83		B9K0019	06-Nov-19	0.254 L	07-Nov-19 18:49	1
PFNA	375-95-1	ND	1.47	4.92	9.83		B9K0019	06-Nov-19	0.254 L	07-Nov-19 18:49	1
PFOS	1763-23-1	ND	1.47	6.89	9.83		B9K0019	06-Nov-19	0.254 L	07-Nov-19 18:49	1
PFDA	335-76-2	ND	1.47	4.92	9.83		B9K0019	06-Nov-19	0.254 L	07-Nov-19 18:49	1
MeFOSAA	2355-31-9	ND	1.47	4.92	9.83		B9K0019	06-Nov-19	0.254 L	07-Nov-19 18:49	1
EtFOSAA	2991-50-6	ND	1.47	4.92	9.83		B9K0019	06-Nov-19	0.254 L	07-Nov-19 18:49	1
PFUnA	2058-94-8	ND	1.47	4.92	9.83		B9K0019	06-Nov-19	0.254 L	07-Nov-19 18:49	1
PFDoA	307-55-1	ND	1.47	4.92	9.83		B9K0019	06-Nov-19	0.254 L	07-Nov-19 18:49	1
PFTTrDA	72629-94-8	ND	1.47	4.92	9.83		B9K0019	06-Nov-19	0.254 L	07-Nov-19 18:49	1
PFTeDA	376-06-7	ND	1.47	4.92	9.83		B9K0019	06-Nov-19	0.254 L	07-Nov-19 18:49	1
HFPO-DA	13252-13-6	ND	1.47	4.92	9.83		B9K0019	06-Nov-19	0.254 L	07-Nov-19 18:49	1
ADONA	919005-14-4	ND	1.47	4.92	9.83		B9K0019	06-Nov-19	0.254 L	07-Nov-19 18:49	1
9CI-PF3ONS	756426-58-1	ND	1.47	4.92	9.83		B9K0019	06-Nov-19	0.254 L	07-Nov-19 18:49	1
11CI-PF3OUdS	763051-92-9	ND	1.47	4.92	9.83		B9K0019	06-Nov-19	0.254 L	07-Nov-19 18:49	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.6		70 - 130			B9K0019	06-Nov-19	0.254 L	07-Nov-19 18:49	1
13C2-PFDA	SURR	92.3		70 - 130			B9K0019	06-Nov-19	0.254 L	07-Nov-19 18:49	1
d5-EtFOSAA	SURR	92.8		70 - 130			B9K0019	06-Nov-19	0.254 L	07-Nov-19 18:49	1
13C3-HFPO-DA	SURR	97.8		70 - 130			B9K0019	06-Nov-19	0.254 L	07-Nov-19 18:49	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

nw ilist20

Sample ID: WI-CV-2RW02-1019							EPA Method 537.1				
Client Data				Laboratory Data							
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903882-02	Column:	BEH C18				
Project:	9000NVT3	Date Collected:	30-Oct-19 14:10	Date Received:	01-Nov-19 09:57						
Location:	DW										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	18.8	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 19:00	1
PFHxA	307-24-4	102	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 19:00	1
PFHpA	375-85-9	22.7	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 19:00	1
PFHxS	355-46-4	37.5	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 19:00	1
PFOA	335-67-1	212	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 19:00	1
PFNA	375-95-1	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 19:00	1
PFOS	1763-23-1	ND	1.46	6.81	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 19:00	1
PFDA	335-76-2	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 19:00	1
MeFOSAA	2355-31-9	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 19:00	1
EtFOSAA	2991-50-6	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 19:00	1
PFUnA	2058-94-8	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 19:00	1
PFDoA	307-55-1	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 19:00	1
PFTTrDA	72629-94-8	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 19:00	1
PFTeDA	376-06-7	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 19:00	1
HFPO-DA	13252-13-6	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 19:00	1
ADONA	919005-14-4	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 19:00	1
9CI-PF3ONS	756426-58-1	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 19:00	1
11CI-PF3OUdS	763051-92-9	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 19:00	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	97.5	70 - 130			B9K0019	06-Nov-19	0.257 L	07-Nov-19 19:00	1	
13C2-PFDA	SURR	103	70 - 130			B9K0019	06-Nov-19	0.257 L	07-Nov-19 19:00	1	
d5-EtFOSAA	SURR	87.9	70 - 130			B9K0019	06-Nov-19	0.257 L	07-Nov-19 19:00	1	
13C3-HFPO-DA	SURR	91.9	70 - 130			B9K0019	06-Nov-19	0.257 L	07-Nov-19 19:00	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw 11.5120

Sample ID: WI-CV-2FB02-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903882-03	Column:	BEH C18
Project:	9000NVT3	Date Collected:	30-Oct-19 14:10	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.45	4.84	9.70		B9K0019	06-Nov-19	0.258 L	07-Nov-19 19:10	1
PFHxA	307-24-4	ND	1.45	4.84	9.70		B9K0019	06-Nov-19	0.258 L	07-Nov-19 19:10	1
PFHpA	375-85-9	ND	1.45	4.84	9.70		B9K0019	06-Nov-19	0.258 L	07-Nov-19 19:10	1
PFHxS	355-46-4	ND	1.45	4.84	9.70		B9K0019	06-Nov-19	0.258 L	07-Nov-19 19:10	1
PFOA	335-67-1	ND	1.45	4.84	9.70		B9K0019	06-Nov-19	0.258 L	07-Nov-19 19:10	1
PFNA	375-95-1	ND	1.45	4.84	9.70		B9K0019	06-Nov-19	0.258 L	07-Nov-19 19:10	1
PFOS	1763-23-1	ND	1.45	6.78	9.70		B9K0019	06-Nov-19	0.258 L	07-Nov-19 19:10	1
PFDA	335-76-2	ND	1.45	4.84	9.70		B9K0019	06-Nov-19	0.258 L	07-Nov-19 19:10	1
MeFOSAA	2355-31-9	ND	1.45	4.84	9.70		B9K0019	06-Nov-19	0.258 L	07-Nov-19 19:10	1
EtFOSAA	2991-50-6	ND	1.45	4.84	9.70		B9K0019	06-Nov-19	0.258 L	07-Nov-19 19:10	1
PFUnA	2058-94-8	ND	1.45	4.84	9.70		B9K0019	06-Nov-19	0.258 L	07-Nov-19 19:10	1
PFDoA	307-55-1	ND	1.45	4.84	9.70		B9K0019	06-Nov-19	0.258 L	07-Nov-19 19:10	1
PFTTrDA	72629-94-8	ND	1.45	4.84	9.70		B9K0019	06-Nov-19	0.258 L	07-Nov-19 19:10	1
PFTeDA	376-06-7	ND	1.45	4.84	9.70		B9K0019	06-Nov-19	0.258 L	07-Nov-19 19:10	1
HFPO-DA	13252-13-6	ND	1.45	4.84	9.70		B9K0019	06-Nov-19	0.258 L	07-Nov-19 19:10	1
ADONA	919005-14-4	ND	1.45	4.84	9.70		B9K0019	06-Nov-19	0.258 L	07-Nov-19 19:10	1
9CI-PF3ONS	756426-58-1	ND	1.45	4.84	9.70		B9K0019	06-Nov-19	0.258 L	07-Nov-19 19:10	1
11CI-PF3OUdS	763051-92-9	ND	1.45	4.84	9.70		B9K0019	06-Nov-19	0.258 L	07-Nov-19 19:10	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	97.8	70 - 130		B9K0019	06-Nov-19	0.258 L	07-Nov-19 19:10	1
13C2-PFDA	SURR	94.9	70 - 130		B9K0019	06-Nov-19	0.258 L	07-Nov-19 19:10	1
d5-EtFOSAA	SURR	97.0	70 - 130		B9K0019	06-Nov-19	0.258 L	07-Nov-19 19:10	1
13C3-HFPO-DA	SURR	98.9	70 - 130		B9K0019	06-Nov-19	0.258 L	07-Nov-19 19:10	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL

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

new 11/15/20

Sample ID: WI-CV-1RW14-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903882-04	Column:	BEH C18
Project:	9000NVT3	Date Collected:	30-Oct-19 14:35	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.51	5.02	10.0		B9K0019	06-Nov-19	0.249 L	07-Nov-19 19:53	1
PFHxA	307-24-4	ND	1.51	5.02	10.0		B9K0019	06-Nov-19	0.249 L	07-Nov-19 19:53	1
PFHpA	375-85-9	ND	1.51	5.02	10.0		B9K0019	06-Nov-19	0.249 L	07-Nov-19 19:53	1
PFHxS	355-46-4	ND	1.51	5.02	10.0		B9K0019	06-Nov-19	0.249 L	07-Nov-19 19:53	1
PFOA	335-67-1	ND	1.51	5.02	10.0		B9K0019	06-Nov-19	0.249 L	07-Nov-19 19:53	1
PFNA	375-95-1	ND	1.51	5.02	10.0		B9K0019	06-Nov-19	0.249 L	07-Nov-19 19:53	1
PFOS	1763-23-1	ND	1.51	7.03	10.0		B9K0019	06-Nov-19	0.249 L	07-Nov-19 19:53	1
PFDA	335-76-2	ND	1.51	5.02	10.0		B9K0019	06-Nov-19	0.249 L	07-Nov-19 19:53	1
MeFOSAA	2355-31-9	ND	1.51	5.02	10.0		B9K0019	06-Nov-19	0.249 L	07-Nov-19 19:53	1
EtFOSAA	2991-50-6	ND	1.51	5.02	10.0		B9K0019	06-Nov-19	0.249 L	07-Nov-19 19:53	1
PFUnA	2058-94-8	ND	1.51	5.02	10.0		B9K0019	06-Nov-19	0.249 L	07-Nov-19 19:53	1
PFDoA	307-55-1	ND	1.51	5.02	10.0		B9K0019	06-Nov-19	0.249 L	07-Nov-19 19:53	1
PFTTrDA	72629-94-8	ND	1.51	5.02	10.0		B9K0019	06-Nov-19	0.249 L	07-Nov-19 19:53	1
PFTeDA	376-06-7	ND	1.51	5.02	10.0		B9K0019	06-Nov-19	0.249 L	07-Nov-19 19:53	1
HFPO-DA	13252-13-6	ND	1.51	5.02	10.0		B9K0019	06-Nov-19	0.249 L	07-Nov-19 19:53	1
ADONA	919005-14-4	ND	1.51	5.02	10.0		B9K0019	06-Nov-19	0.249 L	07-Nov-19 19:53	1
9CI-PF3ONS	756426-58-1	ND	1.51	5.02	10.0		B9K0019	06-Nov-19	0.249 L	07-Nov-19 19:53	1
11CI-PF3OUdS	763051-92-9	ND	1.51	5.02	10.0		B9K0019	06-Nov-19	0.249 L	07-Nov-19 19:53	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	91.2	70 - 130			B9K0019	06-Nov-19	0.249 L	07-Nov-19 19:53	1	
13C2-PFDA	SURR	94.1	70 - 130			B9K0019	06-Nov-19	0.249 L	07-Nov-19 19:53	1	
d5-EtFOSAA	SURR	86.5	70 - 130			B9K0019	06-Nov-19	0.249 L	07-Nov-19 19:53	1	
13C3-HFPO-DA	SURR	93.5	70 - 130			B9K0019	06-Nov-19	0.249 L	07-Nov-19 19:53	1	

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL

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

new 11/5/20

Sample ID: WI-CV-1FB14-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903882-05	Column:	BEH C18
Project:	9000NVT3	Date Collected:	30-Oct-19 14:35	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.45	4.84	9.69		B9K0019	06-Nov-19	0.258 L	07-Nov-19 20:03	1
PFHxA	307-24-4	ND	1.45	4.84	9.69		B9K0019	06-Nov-19	0.258 L	07-Nov-19 20:03	1
PFHpA	375-85-9	ND	1.45	4.84	9.69		B9K0019	06-Nov-19	0.258 L	07-Nov-19 20:03	1
PFHxS	355-46-4	ND	1.45	4.84	9.69		B9K0019	06-Nov-19	0.258 L	07-Nov-19 20:03	1
PFOA	335-67-1	ND	1.45	4.84	9.69		B9K0019	06-Nov-19	0.258 L	07-Nov-19 20:03	1
PFNA	375-95-1	ND	1.45	4.84	9.69		B9K0019	06-Nov-19	0.258 L	07-Nov-19 20:03	1
PFOS	1763-23-1	ND	1.45	6.78	9.69		B9K0019	06-Nov-19	0.258 L	07-Nov-19 20:03	1
PFDA	335-76-2	ND	1.45	4.84	9.69		B9K0019	06-Nov-19	0.258 L	07-Nov-19 20:03	1
MeFOSAA	2355-31-9	ND	1.45	4.84	9.69		B9K0019	06-Nov-19	0.258 L	07-Nov-19 20:03	1
EtFOSAA	2991-50-6	ND	1.45	4.84	9.69		B9K0019	06-Nov-19	0.258 L	07-Nov-19 20:03	1
PFUnA	2058-94-8	ND	1.45	4.84	9.69		B9K0019	06-Nov-19	0.258 L	07-Nov-19 20:03	1
PFDoA	307-55-1	ND	1.45	4.84	9.69		B9K0019	06-Nov-19	0.258 L	07-Nov-19 20:03	1
PFTTrDA	72629-94-8	ND	1.45	4.84	9.69		B9K0019	06-Nov-19	0.258 L	07-Nov-19 20:03	1
PFTeDA	376-06-7	ND	1.45	4.84	9.69		B9K0019	06-Nov-19	0.258 L	07-Nov-19 20:03	1
HFPO-DA	13252-13-6	ND	1.45	4.84	9.69		B9K0019	06-Nov-19	0.258 L	07-Nov-19 20:03	1
ADONA	919005-14-4	ND	1.45	4.84	9.69		B9K0019	06-Nov-19	0.258 L	07-Nov-19 20:03	1
9CI-PF3ONS	756426-58-1	ND	1.45	4.84	9.69		B9K0019	06-Nov-19	0.258 L	07-Nov-19 20:03	1
11CI-PF3OUdS	763051-92-9	ND	1.45	4.84	9.69		B9K0019	06-Nov-19	0.258 L	07-Nov-19 20:03	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	92.1	70 - 130			B9K0019	06-Nov-19	0.258 L	07-Nov-19 20:03	1	
13C2-PFDA	SURR	92.6	70 - 130			B9K0019	06-Nov-19	0.258 L	07-Nov-19 20:03	1	
d5-EtFOSAA	SURR	102	70 - 130			B9K0019	06-Nov-19	0.258 L	07-Nov-19 20:03	1	
13C3-HFPO-DA	SURR	96.4	70 - 130			B9K0019	06-Nov-19	0.258 L	07-Nov-19 20:03	1	

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

nw 11/5/20

Sample ID: WI-CV-1RW01-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903882-06	Column:	BEH C18
Project:	9000NVT3	Date Collected:	30-Oct-19 15:20	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	39.9	1.44	4.79	9.59		B9K0019	06-Nov-19	0.261 L	07-Nov-19 20:14	1
PFHxA	307-24-4	99.6	1.44	4.79	9.59		B9K0019	06-Nov-19	0.261 L	07-Nov-19 20:14	1
PFHpA	375-85-9	32.5	1.44	4.79	9.59		B9K0019	06-Nov-19	0.261 L	07-Nov-19 20:14	1
PFHxS	355-46-4	340	7.19	23.9	47.9	✗	B9K0019	06-Nov-19	0.261 L	08-Nov-19 17:12	5
PFOA	335-67-1	352	1.44	4.79	9.59		B9K0019	06-Nov-19	0.261 L	07-Nov-19 20:14	1
PFNA	375-95-1	ND	1.44	4.79	9.59		B9K0019	06-Nov-19	0.261 L	07-Nov-19 20:14	1
PFOS	1763-23-1	ND	1.44	6.70	9.59		B9K0019	06-Nov-19	0.261 L	07-Nov-19 20:14	1
PFDA	335-76-2	ND	1.44	4.79	9.59		B9K0019	06-Nov-19	0.261 L	07-Nov-19 20:14	1
MeFOSAA	2355-31-9	ND	1.44	4.79	9.59		B9K0019	06-Nov-19	0.261 L	07-Nov-19 20:14	1
EtFOSAA	2991-50-6	ND	1.44	4.79	9.59		B9K0019	06-Nov-19	0.261 L	07-Nov-19 20:14	1
PFUnA	2058-94-8	ND	1.44	4.79	9.59		B9K0019	06-Nov-19	0.261 L	07-Nov-19 20:14	1
PFDoA	307-55-1	ND	1.44	4.79	9.59		B9K0019	06-Nov-19	0.261 L	07-Nov-19 20:14	1
PFTrDA	72629-94-8	ND	1.44	4.79	9.59		B9K0019	06-Nov-19	0.261 L	07-Nov-19 20:14	1
PFTeDA	376-06-7	ND	1.44	4.79	9.59		B9K0019	06-Nov-19	0.261 L	07-Nov-19 20:14	1
HFPO-DA	13252-13-6	ND	1.44	4.79	9.59		B9K0019	06-Nov-19	0.261 L	07-Nov-19 20:14	1
ADONA	919005-14-4	ND	1.44	4.79	9.59		B9K0019	06-Nov-19	0.261 L	07-Nov-19 20:14	1
9CI-PF3ONS	756426-58-1	ND	1.44	4.79	9.59		B9K0019	06-Nov-19	0.261 L	07-Nov-19 20:14	1
11CI-PF3OUdS	763051-92-9	ND	1.44	4.79	9.59		B9K0019	06-Nov-19	0.261 L	07-Nov-19 20:14	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	101	70 - 130			B9K0019	06-Nov-19	0.261 L	07-Nov-19 20:14	1	
13C2-PFDA	SURR	83.9	70 - 130			B9K0019	06-Nov-19	0.261 L	07-Nov-19 20:14	1	
d5-EtFOSAA	SURR	93.9	70 - 130			B9K0019	06-Nov-19	0.261 L	07-Nov-19 20:14	1	
13C3-HFPO-DA	SURR	95.0	70 - 130			B9K0019	06-Nov-19	0.261 L	07-Nov-19 20:14	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 11/15/20

Sample ID: WI-CV-1FB01-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903882-07	Column:	BEH C18
Project:	9000NVT3	Date Collected:	30-Oct-19 15:20	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.46	4.88	9.75		B9K0019	06-Nov-19	0.256 L	07-Nov-19 20:25	1
PFHxA	307-24-4	ND	1.46	4.88	9.75		B9K0019	06-Nov-19	0.256 L	07-Nov-19 20:25	1
PFHpA	375-85-9	ND	1.46	4.88	9.75		B9K0019	06-Nov-19	0.256 L	07-Nov-19 20:25	1
PFHxS	355-46-4	ND	1.46	4.88	9.75		B9K0019	06-Nov-19	0.256 L	07-Nov-19 20:25	1
PFOA	335-67-1	ND	1.46	4.88	9.75		B9K0019	06-Nov-19	0.256 L	07-Nov-19 20:25	1
PFNA	375-95-1	ND	1.46	4.88	9.75		B9K0019	06-Nov-19	0.256 L	07-Nov-19 20:25	1
PFOS	1763-23-1	ND	1.46	6.84	9.75		B9K0019	06-Nov-19	0.256 L	07-Nov-19 20:25	1
PFDA	335-76-2	ND	1.46	4.88	9.75		B9K0019	06-Nov-19	0.256 L	07-Nov-19 20:25	1
MeFOSAA	2355-31-9	ND	1.46	4.88	9.75		B9K0019	06-Nov-19	0.256 L	07-Nov-19 20:25	1
EtFOSAA	2991-50-6	ND	1.46	4.88	9.75		B9K0019	06-Nov-19	0.256 L	07-Nov-19 20:25	1
PFUnA	2058-94-8	ND	1.46	4.88	9.75		B9K0019	06-Nov-19	0.256 L	07-Nov-19 20:25	1
PFDoA	307-55-1	ND	1.46	4.88	9.75		B9K0019	06-Nov-19	0.256 L	07-Nov-19 20:25	1
PFTTrDA	72629-94-8	ND	1.46	4.88	9.75		B9K0019	06-Nov-19	0.256 L	07-Nov-19 20:25	1
PFTeDA	376-06-7	ND	1.46	4.88	9.75		B9K0019	06-Nov-19	0.256 L	07-Nov-19 20:25	1
HFPO-DA	13252-13-6	ND	1.46	4.88	9.75		B9K0019	06-Nov-19	0.256 L	07-Nov-19 20:25	1
ADONA	919005-14-4	ND	1.46	4.88	9.75		B9K0019	06-Nov-19	0.256 L	07-Nov-19 20:25	1
9CI-PF3ONS	756426-58-1	ND	1.46	4.88	9.75		B9K0019	06-Nov-19	0.256 L	07-Nov-19 20:25	1
11CI-PF3OUdS	763051-92-9	ND	1.46	4.88	9.75		B9K0019	06-Nov-19	0.256 L	07-Nov-19 20:25	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	94.2		70 - 130			B9K0019	06-Nov-19	0.256 L	07-Nov-19 20:25	1
13C2-PFDA	SURR	97.0		70 - 130			B9K0019	06-Nov-19	0.256 L	07-Nov-19 20:25	1
d5-EtFOSAA	SURR	94.0		70 - 130			B9K0019	06-Nov-19	0.256 L	07-Nov-19 20:25	1
13C3-HFPO-DA	SURR	95.5		70 - 130			B9K0019	06-Nov-19	0.256 L	07-Nov-19 20:25	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL

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

nr 11/15/20

Sample ID: WI-CV-1RW27-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903882-08	Column:	BEH C18
Project:	9000NVT3	Date Collected:	31-Oct-19 08:35	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.48	4.94	9.88		B9K0019	06-Nov-19	0.253 L	07-Nov-19 20:35	1
PFHxA	307-24-4	ND	1.48	4.94	9.88		B9K0019	06-Nov-19	0.253 L	07-Nov-19 20:35	1
PFHpA	375-85-9	ND	1.48	4.94	9.88		B9K0019	06-Nov-19	0.253 L	07-Nov-19 20:35	1
PFHxS	355-46-4	ND	1.48	4.94	9.88		B9K0019	06-Nov-19	0.253 L	07-Nov-19 20:35	1
PFOA	335-67-1	ND	1.48	4.94	9.88		B9K0019	06-Nov-19	0.253 L	07-Nov-19 20:35	1
PFNA	375-95-1	ND	1.48	4.94	9.88		B9K0019	06-Nov-19	0.253 L	07-Nov-19 20:35	1
PFOS	1763-23-1	ND	1.48	6.92	9.88		B9K0019	06-Nov-19	0.253 L	07-Nov-19 20:35	1
PFDA	335-76-2	ND	1.48	4.94	9.88		B9K0019	06-Nov-19	0.253 L	07-Nov-19 20:35	1
MeFOSAA	2355-31-9	ND	1.48	4.94	9.88		B9K0019	06-Nov-19	0.253 L	07-Nov-19 20:35	1
EtFOSAA	2991-50-6	ND	1.48	4.94	9.88		B9K0019	06-Nov-19	0.253 L	07-Nov-19 20:35	1
PFUnA	2058-94-8	ND	1.48	4.94	9.88		B9K0019	06-Nov-19	0.253 L	07-Nov-19 20:35	1
PFDoA	307-55-1	ND	1.48	4.94	9.88		B9K0019	06-Nov-19	0.253 L	07-Nov-19 20:35	1
PFTTrDA	72629-94-8	ND	1.48	4.94	9.88		B9K0019	06-Nov-19	0.253 L	07-Nov-19 20:35	1
PFTeDA	376-06-7	ND	1.48	4.94	9.88		B9K0019	06-Nov-19	0.253 L	07-Nov-19 20:35	1
HFPO-DA	13252-13-6	ND	1.48	4.94	9.88		B9K0019	06-Nov-19	0.253 L	07-Nov-19 20:35	1
ADONA	919005-14-4	ND	1.48	4.94	9.88		B9K0019	06-Nov-19	0.253 L	07-Nov-19 20:35	1
9CI-PF3ONS	756426-58-1	ND	1.48	4.94	9.88		B9K0019	06-Nov-19	0.253 L	07-Nov-19 20:35	1
11CI-PF3OUdS	763051-92-9	ND	1.48	4.94	9.88		B9K0019	06-Nov-19	0.253 L	07-Nov-19 20:35	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	101	70 - 130			B9K0019	06-Nov-19	0.253 L	07-Nov-19 20:35	1	
13C2-PFDA	SURR	98.6	70 - 130			B9K0019	06-Nov-19	0.253 L	07-Nov-19 20:35	1	
d5-EtFOSAA	SURR	99.7	70 - 130			B9K0019	06-Nov-19	0.253 L	07-Nov-19 20:35	1	
13C3-HFPO-DA	SURR	99.7	70 - 130			B9K0019	06-Nov-19	0.253 L	07-Nov-19 20:35	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL

LOQ - Limit of quantitation

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

aw 11/15/20

Sample ID: WI-CV-1FB27-1019

EPA Method 537.1

Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1903882-09	Column:	BEH C18			
Project:	9000NVT3	Date Collected:	31-Oct-19 08:35		Date Received:	01-Nov-19 09:57					
Location:	DW										

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 20:46	1
PFHxA	307-24-4	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 20:46	1
PFHpA	375-85-9	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 20:46	1
PFHxS	355-46-4	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 20:46	1
PFOA	335-67-1	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 20:46	1
PFNA	375-95-1	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 20:46	1
PFOS	1763-23-1	ND	1.46	6.81	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 20:46	1
PFDA	335-76-2	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 20:46	1
MeFOSAA	2355-31-9	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 20:46	1
EtFOSAA	2991-50-6	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 20:46	1
PFUnA	2058-94-8	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 20:46	1
PFDoA	307-55-1	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 20:46	1
PFTTrDA	72629-94-8	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 20:46	1
PFTeDA	376-06-7	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 20:46	1
HFPO-DA	13252-13-6	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 20:46	1
ADONA	919005-14-4	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 20:46	1
9CI-PF3ONS	756426-58-1	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 20:46	1
11CI-PF3OUdS	763051-92-9	ND	1.46	4.86	9.74		B9K0019	06-Nov-19	0.257 L	07-Nov-19 20:46	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	98.9	70 - 130			B9K0019	06-Nov-19	0.257 L	07-Nov-19 20:46	1	
13C2-PFDA	SURR	99.5	70 - 130			B9K0019	06-Nov-19	0.257 L	07-Nov-19 20:46	1	
d5-EtFOSAA	SURR	99.4	70 - 130			B9K0019	06-Nov-19	0.257 L	07-Nov-19 20:46	1	
13C3-HFPO-DA	SURR	94.3	70 - 130			B9K0019	06-Nov-19	0.257 L	07-Nov-19 20:46	1	

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

ms 11/15/20

Sample ID: WI-CV-1RW25-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903882-10	Column:	BEH C18
Project:	9000NVT3	Date Collected:	31-Oct-19 09:00	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.52	5.08	10.2		B9K0019	06-Nov-19	0.246 L	07-Nov-19 20:56	1
PFHxA	307-24-4	ND	1.52	5.08	10.2		B9K0019	06-Nov-19	0.246 L	07-Nov-19 20:56	1
PFHpA	375-85-9	ND	1.52	5.08	10.2		B9K0019	06-Nov-19	0.246 L	07-Nov-19 20:56	1
PFHxS	355-46-4	ND	1.52	5.08	10.2		B9K0019	06-Nov-19	0.246 L	07-Nov-19 20:56	1
PFOA	335-67-1	ND	1.52	5.08	10.2		B9K0019	06-Nov-19	0.246 L	07-Nov-19 20:56	1
PFNA	375-95-1	ND	1.52	5.08	10.2		B9K0019	06-Nov-19	0.246 L	07-Nov-19 20:56	1
PFOS	1763-23-1	ND	1.52	7.11	10.2		B9K0019	06-Nov-19	0.246 L	07-Nov-19 20:56	1
PFDA	335-76-2	ND	1.52	5.08	10.2		B9K0019	06-Nov-19	0.246 L	07-Nov-19 20:56	1
MeFOSAA	2355-31-9	ND	1.52	5.08	10.2		B9K0019	06-Nov-19	0.246 L	07-Nov-19 20:56	1
EtFOSAA	2991-50-6	ND	1.52	5.08	10.2		B9K0019	06-Nov-19	0.246 L	07-Nov-19 20:56	1
PFUnA	2058-94-8	ND	1.52	5.08	10.2		B9K0019	06-Nov-19	0.246 L	07-Nov-19 20:56	1
PFDoA	307-55-1	ND	1.52	5.08	10.2		B9K0019	06-Nov-19	0.246 L	07-Nov-19 20:56	1
PFTrDA	72629-94-8	ND	1.52	5.08	10.2		B9K0019	06-Nov-19	0.246 L	07-Nov-19 20:56	1
PFTeDA	376-06-7	ND	1.52	5.08	10.2		B9K0019	06-Nov-19	0.246 L	07-Nov-19 20:56	1
HFPO-DA	13252-13-6	ND	1.52	5.08	10.2		B9K0019	06-Nov-19	0.246 L	07-Nov-19 20:56	1
ADONA	919005-14-4	ND	1.52	5.08	10.2		B9K0019	06-Nov-19	0.246 L	07-Nov-19 20:56	1
9CI-PF3ONS	756426-58-1	ND	1.52	5.08	10.2		B9K0019	06-Nov-19	0.246 L	07-Nov-19 20:56	1
11CI-PF3OUdS	763051-92-9	ND	1.52	5.08	10.2		B9K0019	06-Nov-19	0.246 L	07-Nov-19 20:56	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	102	70 - 130			B9K0019	06-Nov-19	0.246 L	07-Nov-19 20:56	1	
13C2-PFDA	SURR	100	70 - 130			B9K0019	06-Nov-19	0.246 L	07-Nov-19 20:56	1	
d5-EtFOSAA	SURR	91.4	70 - 130			B9K0019	06-Nov-19	0.246 L	07-Nov-19 20:56	1	
13C3-HFPO-DA	SURR	98.2	70 - 130			B9K0019	06-Nov-19	0.246 L	07-Nov-19 20:56	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw 11/5/20

Sample ID: WI-CV-1FB25-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903882-11	Column:	BEH C18
Project:	9000NVT3	Date Collected:	31-Oct-19 09:00	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.46	4.86	9.73		B9K0019	06-Nov-19	0.257 L	07-Nov-19 21:07	1
PFHxA	307-24-4	ND	1.46	4.86	9.73		B9K0019	06-Nov-19	0.257 L	07-Nov-19 21:07	1
PFHpA	375-85-9	ND	1.46	4.86	9.73		B9K0019	06-Nov-19	0.257 L	07-Nov-19 21:07	1
PFHxS	355-46-4	ND	1.46	4.86	9.73		B9K0019	06-Nov-19	0.257 L	07-Nov-19 21:07	1
PFOA	335-67-1	ND	1.46	4.86	9.73		B9K0019	06-Nov-19	0.257 L	07-Nov-19 21:07	1
PFNA	375-95-1	ND	1.46	4.86	9.73		B9K0019	06-Nov-19	0.257 L	07-Nov-19 21:07	1
PFOS	1763-23-1	ND	1.46	6.81	9.73		B9K0019	06-Nov-19	0.257 L	07-Nov-19 21:07	1
PFDA	335-76-2	ND	1.46	4.86	9.73		B9K0019	06-Nov-19	0.257 L	07-Nov-19 21:07	1
MeFOSAA	2355-31-9	ND	1.46	4.86	9.73		B9K0019	06-Nov-19	0.257 L	07-Nov-19 21:07	1
EtFOSAA	2991-50-6	ND	1.46	4.86	9.73		B9K0019	06-Nov-19	0.257 L	07-Nov-19 21:07	1
PFOA	2058-94-8	ND	1.46	4.86	9.73		B9K0019	06-Nov-19	0.257 L	07-Nov-19 21:07	1
PFDoA	307-55-1	ND	1.46	4.86	9.73		B9K0019	06-Nov-19	0.257 L	07-Nov-19 21:07	1
PFTTrDA	72629-94-8	ND	1.46	4.86	9.73		B9K0019	06-Nov-19	0.257 L	07-Nov-19 21:07	1
PFTeDA	376-06-7	ND	1.46	4.86	9.73		B9K0019	06-Nov-19	0.257 L	07-Nov-19 21:07	1
HFPO-DA	13252-13-6	ND	1.46	4.86	9.73		B9K0019	06-Nov-19	0.257 L	07-Nov-19 21:07	1
ADONA	919005-14-4	ND	1.46	4.86	9.73		B9K0019	06-Nov-19	0.257 L	07-Nov-19 21:07	1
9CI-PF3ONS	756426-58-1	ND	1.46	4.86	9.73		B9K0019	06-Nov-19	0.257 L	07-Nov-19 21:07	1
11CI-PF3OUdS	763051-92-9	ND	1.46	4.86	9.73		B9K0019	06-Nov-19	0.257 L	07-Nov-19 21:07	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	108	70 - 130			B9K0019	06-Nov-19	0.257 L	07-Nov-19 21:07	1	
13C2-PFDA	SURR	108	70 - 130			B9K0019	06-Nov-19	0.257 L	07-Nov-19 21:07	1	
d5-EtFOSAA	SURR	103	70 - 130			B9K0019	06-Nov-19	0.257 L	07-Nov-19 21:07	1	
13C3-HFPO-DA	SURR	101	70 - 130			B9K0019	06-Nov-19	0.257 L	07-Nov-19 21:07	1	

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

Results reported to the DL.

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

rw 11/5/20

Sample ID: WI-CV-1RW26-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903882-12	Column:	BEH C18
Project:	9000NVT3	Date Collected:	31-Oct-19 09:15	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.51	5.02	10.1		B9K0019	06-Nov-19	0.249 L	07-Nov-19 21:18	1
PFHxA	307-24-4	ND	1.51	5.02	10.1		B9K0019	06-Nov-19	0.249 L	07-Nov-19 21:18	1
PFHpA	375-85-9	ND	1.51	5.02	10.1		B9K0019	06-Nov-19	0.249 L	07-Nov-19 21:18	1
PFHxS	355-46-4	ND	1.51	5.02	10.1		B9K0019	06-Nov-19	0.249 L	07-Nov-19 21:18	1
PFOA	335-67-1	ND	1.51	5.02	10.1		B9K0019	06-Nov-19	0.249 L	07-Nov-19 21:18	1
PFNA	375-95-1	ND	1.51	5.02	10.1		B9K0019	06-Nov-19	0.249 L	07-Nov-19 21:18	1
PFOS	1763-23-1	ND	1.51	7.03	10.1		B9K0019	06-Nov-19	0.249 L	07-Nov-19 21:18	1
PFDA	335-76-2	ND	1.51	5.02	10.1		B9K0019	06-Nov-19	0.249 L	07-Nov-19 21:18	1
MeFOSAA	2355-31-9	ND	1.51	5.02	10.1		B9K0019	06-Nov-19	0.249 L	07-Nov-19 21:18	1
EtFOSAA	2991-50-6	ND	1.51	5.02	10.1		B9K0019	06-Nov-19	0.249 L	07-Nov-19 21:18	1
PFUnA	2058-94-8	ND	1.51	5.02	10.1		B9K0019	06-Nov-19	0.249 L	07-Nov-19 21:18	1
PFDoA	307-55-1	ND	1.51	5.02	10.1		B9K0019	06-Nov-19	0.249 L	07-Nov-19 21:18	1
PFTTrDA	72629-94-8	ND	1.51	5.02	10.1		B9K0019	06-Nov-19	0.249 L	07-Nov-19 21:18	1
PFTeDA	376-06-7	ND	1.51	5.02	10.1		B9K0019	06-Nov-19	0.249 L	07-Nov-19 21:18	1
HFPO-DA	13252-13-6	ND	1.51	5.02	10.1		B9K0019	06-Nov-19	0.249 L	07-Nov-19 21:18	1
ADONA	919005-14-4	ND	1.51	5.02	10.1		B9K0019	06-Nov-19	0.249 L	07-Nov-19 21:18	1
9CI-PF3ONS	756426-58-1	ND	1.51	5.02	10.1		B9K0019	06-Nov-19	0.249 L	07-Nov-19 21:18	1
11CI-PF3OUdS	763051-92-9	ND	1.51	5.02	10.1		B9K0019	06-Nov-19	0.249 L	07-Nov-19 21:18	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	94.6	70 - 130			B9K0019	06-Nov-19	0.249 L	07-Nov-19 21:18	1	
13C2-PFDA	SURR	95.2	70 - 130			B9K0019	06-Nov-19	0.249 L	07-Nov-19 21:18	1	
d5-EtFOSAA	SURR	91.1	70 - 130			B9K0019	06-Nov-19	0.249 L	07-Nov-19 21:18	1	
13C3-HFPO-DA	SURR	94.7	70 - 130			B9K0019	06-Nov-19	0.249 L	07-Nov-19 21:18	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

11/15/20

Sample ID: WI-CV-1FB26-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903882-13	Column:	BEH C18
Project:	9000NVT3	Date Collected:	31-Oct-19 09:15	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.45	4.83	9.64		B9K0019	06-Nov-19	0.259 L	07-Nov-19 21:28	1
PFHxA	307-24-4	ND	1.45	4.83	9.64		B9K0019	06-Nov-19	0.259 L	07-Nov-19 21:28	1
PFHpA	375-85-9	ND	1.45	4.83	9.64		B9K0019	06-Nov-19	0.259 L	07-Nov-19 21:28	1
PFHxS	355-46-4	ND	1.45	4.83	9.64		B9K0019	06-Nov-19	0.259 L	07-Nov-19 21:28	1
PFOA	335-67-1	ND	1.45	4.83	9.64		B9K0019	06-Nov-19	0.259 L	07-Nov-19 21:28	1
PFNA	375-95-1	ND	1.45	4.83	9.64		B9K0019	06-Nov-19	0.259 L	07-Nov-19 21:28	1
PFOS	1763-23-1	ND	1.45	6.76	9.64		B9K0019	06-Nov-19	0.259 L	07-Nov-19 21:28	1
PFDA	335-76-2	ND	1.45	4.83	9.64		B9K0019	06-Nov-19	0.259 L	07-Nov-19 21:28	1
MeFOSAA	2355-31-9	ND	1.45	4.83	9.64		B9K0019	06-Nov-19	0.259 L	07-Nov-19 21:28	1
EtFOSAA	2991-50-6	ND	1.45	4.83	9.64		B9K0019	06-Nov-19	0.259 L	07-Nov-19 21:28	1
PFUnA	2058-94-8	ND	1.45	4.83	9.64		B9K0019	06-Nov-19	0.259 L	07-Nov-19 21:28	1
PFDoA	307-55-1	ND	1.45	4.83	9.64		B9K0019	06-Nov-19	0.259 L	07-Nov-19 21:28	1
PFTTrDA	72629-94-8	ND	1.45	4.83	9.64		B9K0019	06-Nov-19	0.259 L	07-Nov-19 21:28	1
PFTeDA	376-06-7	ND	1.45	4.83	9.64		B9K0019	06-Nov-19	0.259 L	07-Nov-19 21:28	1
HFPO-DA	13252-13-6	ND	1.45	4.83	9.64		B9K0019	06-Nov-19	0.259 L	07-Nov-19 21:28	1
ADONA	919005-14-4	ND	1.45	4.83	9.64		B9K0019	06-Nov-19	0.259 L	07-Nov-19 21:28	1
9CI-PF3ONS	756426-58-1	ND	1.45	4.83	9.64		B9K0019	06-Nov-19	0.259 L	07-Nov-19 21:28	1
11CI-PF3OUdS	763051-92-9	ND	1.45	4.83	9.64		B9K0019	06-Nov-19	0.259 L	07-Nov-19 21:28	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	101	70 - 130			B9K0019	06-Nov-19	0.259 L	07-Nov-19 21:28	1	
13C2-PFDA	SURR	100	70 - 130			B9K0019	06-Nov-19	0.259 L	07-Nov-19 21:28	1	
d5-EtFOSAA	SURR	103	70 - 130			B9K0019	06-Nov-19	0.259 L	07-Nov-19 21:28	1	
13C3-HFPO-DA	SURR	91.5	70 - 130			B9K0019	06-Nov-19	0.259 L	07-Nov-19 21:28	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

11/15/20

Sample ID: WI-CV-1RW24-1019 EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903882-14	Column:	BEH C18
Project:	9000NVT3	Date Collected:	31-Oct-19 09:30	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.47	4.90	9.81		B9K0019	06-Nov-19	0.255 L	07-Nov-19 22:11	1
PFHxA	307-24-4	ND	1.47	4.90	9.81		B9K0019	06-Nov-19	0.255 L	07-Nov-19 22:11	1
PFHpA	375-85-9	ND	1.47	4.90	9.81		B9K0019	06-Nov-19	0.255 L	07-Nov-19 22:11	1
PFHxS	355-46-4	ND	1.47	4.90	9.81		B9K0019	06-Nov-19	0.255 L	07-Nov-19 22:11	1
PFOA	335-67-1	ND	1.47	4.90	9.81		B9K0019	06-Nov-19	0.255 L	07-Nov-19 22:11	1
PFNA	375-95-1	ND	1.47	4.90	9.81		B9K0019	06-Nov-19	0.255 L	07-Nov-19 22:11	1
PFOS	1763-23-1	ND	1.47	6.86	9.81		B9K0019	06-Nov-19	0.255 L	07-Nov-19 22:11	1
PFDA	335-76-2	ND	1.47	4.90	9.81		B9K0019	06-Nov-19	0.255 L	07-Nov-19 22:11	1
MeFOSAA	2355-31-9	ND	1.47	4.90	9.81		B9K0019	06-Nov-19	0.255 L	07-Nov-19 22:11	1
EtFOSAA	2991-50-6	ND	1.47	4.90	9.81		B9K0019	06-Nov-19	0.255 L	07-Nov-19 22:11	1
PFUnA	2058-94-8	ND	1.47	4.90	9.81		B9K0019	06-Nov-19	0.255 L	07-Nov-19 22:11	1
PFDoA	307-55-1	ND	1.47	4.90	9.81		B9K0019	06-Nov-19	0.255 L	07-Nov-19 22:11	1
PFTTrDA	72629-94-8	ND	1.47	4.90	9.81		B9K0019	06-Nov-19	0.255 L	07-Nov-19 22:11	1
PFTeDA	376-06-7	ND	1.47	4.90	9.81		B9K0019	06-Nov-19	0.255 L	07-Nov-19 22:11	1
HFPO-DA	13252-13-6	ND	1.47	4.90	9.81		B9K0019	06-Nov-19	0.255 L	07-Nov-19 22:11	1
ADONA	919005-14-4	ND	1.47	4.90	9.81		B9K0019	06-Nov-19	0.255 L	07-Nov-19 22:11	1
9CI-PF3ONS	756426-58-1	ND	1.47	4.90	9.81		B9K0019	06-Nov-19	0.255 L	07-Nov-19 22:11	1
11CI-PF3OUdS	763051-92-9	ND	1.47	4.90	9.81		B9K0019	06-Nov-19	0.255 L	07-Nov-19 22:11	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	90.7		70 - 130			B9K0019	06-Nov-19	0.255 L	07-Nov-19 22:11	1
13C2-PFDA	SURR	87.9		70 - 130			B9K0019	06-Nov-19	0.255 L	07-Nov-19 22:11	1
d5-EtFOSAA	SURR	70.0		70 - 130			B9K0019	06-Nov-19	0.255 L	07-Nov-19 22:11	1
13C3-HFPO-DA	SURR	85.2		70 - 130			B9K0019	06-Nov-19	0.255 L	07-Nov-19 22:11	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

Results reported to the DL

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

mwilist20

Sample ID: WI-CV-1FB24-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903882-15	Column:	BEH C18
Project:	9000NVT3	Date Collected:	31-Oct-19 09:30	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.48	4.92	9.84		B9K0019	06-Nov-19	0.254 L	07-Nov-19 22:21	1
PFHxA	307-24-4	ND	1.48	4.92	9.84		B9K0019	06-Nov-19	0.254 L	07-Nov-19 22:21	1
PFHpA	375-85-9	ND	1.48	4.92	9.84		B9K0019	06-Nov-19	0.254 L	07-Nov-19 22:21	1
PFHxS	355-46-4	ND	1.48	4.92	9.84		B9K0019	06-Nov-19	0.254 L	07-Nov-19 22:21	1
PFOA	335-67-1	ND	1.48	4.92	9.84		B9K0019	06-Nov-19	0.254 L	07-Nov-19 22:21	1
PFNA	375-95-1	ND	1.48	4.92	9.84		B9K0019	06-Nov-19	0.254 L	07-Nov-19 22:21	1
PFOS	1763-23-1	ND	1.48	6.89	9.84		B9K0019	06-Nov-19	0.254 L	07-Nov-19 22:21	1
PFDA	335-76-2	ND	1.48	4.92	9.84		B9K0019	06-Nov-19	0.254 L	07-Nov-19 22:21	1
MeFOSAA	2355-31-9	ND	1.48	4.92	9.84		B9K0019	06-Nov-19	0.254 L	07-Nov-19 22:21	1
EtFOSAA	2991-50-6	ND	1.48	4.92	9.84		B9K0019	06-Nov-19	0.254 L	07-Nov-19 22:21	1
PFUnA	2058-94-8	ND	1.48	4.92	9.84		B9K0019	06-Nov-19	0.254 L	07-Nov-19 22:21	1
PFDoA	307-55-1	ND	1.48	4.92	9.84		B9K0019	06-Nov-19	0.254 L	07-Nov-19 22:21	1
PFTTrDA	72629-94-8	ND	1.48	4.92	9.84		B9K0019	06-Nov-19	0.254 L	07-Nov-19 22:21	1
PFTeDA	376-06-7	ND	1.48	4.92	9.84		B9K0019	06-Nov-19	0.254 L	07-Nov-19 22:21	1
HFPO-DA	13252-13-6	ND	1.48	4.92	9.84		B9K0019	06-Nov-19	0.254 L	07-Nov-19 22:21	1
ADONA	919005-14-4	ND	1.48	4.92	9.84		B9K0019	06-Nov-19	0.254 L	07-Nov-19 22:21	1
9CI-PF3ONS	756426-58-1	ND	1.48	4.92	9.84		B9K0019	06-Nov-19	0.254 L	07-Nov-19 22:21	1
11CI-PF3OUdS	763051-92-9	ND	1.48	4.92	9.84		B9K0019	06-Nov-19	0.254 L	07-Nov-19 22:21	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	96.3		70 - 130			B9K0019	06-Nov-19	0.254 L	07-Nov-19 22:21	1
13C2-PFDA	SURR	95.4		70 - 130			B9K0019	06-Nov-19	0.254 L	07-Nov-19 22:21	1
d5-EtFOSAA	SURR	95.3		70 - 130			B9K0019	06-Nov-19	0.254 L	07-Nov-19 22:21	1
13C3-HFPO-DA	SURR	86.5		70 - 130			B9K0019	06-Nov-19	0.254 L	07-Nov-19 22:21	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL

LOQ - Limit of quantitation

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

ms/d/s/20

Sample ID: WI-CV-1RW23-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903882-16	Column:	BEH C18
Project:	9000NVT3	Date Collected:	31-Oct-19 09:50	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	17.5	1.49	4.96	9.92		B9K0019	06-Nov-19	0.252 L	07-Nov-19 22:32	1
PFHxA	307-24-4	41.4	1.49	4.96	9.92		B9K0019	06-Nov-19	0.252 L	07-Nov-19 22:32	1
PFHpA	375-85-9	10.6	1.49	4.96	9.92		B9K0019	06-Nov-19	0.252 L	07-Nov-19 22:32	1
PFHxS	355-46-4	59.3	1.49	4.96	9.92		B9K0019	06-Nov-19	0.252 L	07-Nov-19 22:32	1
PFOA	335-67-1	62.5	1.49	4.96	9.92		B9K0019	06-Nov-19	0.252 L	07-Nov-19 22:32	1
PFNA	375-95-1	ND	1.49	4.96	9.92		B9K0019	06-Nov-19	0.252 L	07-Nov-19 22:32	1
PFOS	1763-23-1	ND	1.49	6.94	9.92		B9K0019	06-Nov-19	0.252 L	07-Nov-19 22:32	1
PFDA	335-76-2	ND	1.49	4.96	9.92		B9K0019	06-Nov-19	0.252 L	07-Nov-19 22:32	1
MeFOSAA	2355-31-9	ND	1.49	4.96	9.92		B9K0019	06-Nov-19	0.252 L	07-Nov-19 22:32	1
EtFOSAA	2991-50-6	ND	1.49	4.96	9.92		B9K0019	06-Nov-19	0.252 L	07-Nov-19 22:32	1
PFUnA	2058-94-8	ND	1.49	4.96	9.92		B9K0019	06-Nov-19	0.252 L	07-Nov-19 22:32	1
PFDoA	307-55-1	ND	1.49	4.96	9.92		B9K0019	06-Nov-19	0.252 L	07-Nov-19 22:32	1
PFTTrDA	72629-94-8	ND	1.49	4.96	9.92		B9K0019	06-Nov-19	0.252 L	07-Nov-19 22:32	1
PFTeDA	376-06-7	ND	1.49	4.96	9.92		B9K0019	06-Nov-19	0.252 L	07-Nov-19 22:32	1
HFPO-DA	13252-13-6	ND	1.49	4.96	9.92		B9K0019	06-Nov-19	0.252 L	07-Nov-19 22:32	1
ADONA	919005-14-4	ND	1.49	4.96	9.92		B9K0019	06-Nov-19	0.252 L	07-Nov-19 22:32	1
9CI-PF3ONS	756426-58-1	ND	1.49	4.96	9.92		B9K0019	06-Nov-19	0.252 L	07-Nov-19 22:32	1
11CI-PF3OUdS	763051-92-9	ND	1.49	4.96	9.92		B9K0019	06-Nov-19	0.252 L	07-Nov-19 22:32	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.9		70 - 130			B9K0019	06-Nov-19	0.252 L	07-Nov-19 22:32	1
13C2-PFDA	SURR	93.6		70 - 130			B9K0019	06-Nov-19	0.252 L	07-Nov-19 22:32	1
d5-EtFOSAA	SURR	87.8		70 - 130			B9K0019	06-Nov-19	0.252 L	07-Nov-19 22:32	1
13C3-HFPO-DA	SURR	91.4		70 - 130			B9K0019	06-Nov-19	0.252 L	07-Nov-19 22:32	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL

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

with 1/20

Sample ID: WI-CV-1FB23-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903882-17	Column:	BEH C18
Project:	9000NVT3	Date Collected:	31-Oct-19 09:50	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.47	4.88	9.78		B9K0019	06-Nov-19	0.256 L	07-Nov-19 22:43	1
PFHxA	307-24-4	ND	1.47	4.88	9.78		B9K0019	06-Nov-19	0.256 L	07-Nov-19 22:43	1
PFHpA	375-85-9	ND	1.47	4.88	9.78		B9K0019	06-Nov-19	0.256 L	07-Nov-19 22:43	1
PFHxS	355-46-4	ND	1.47	4.88	9.78		B9K0019	06-Nov-19	0.256 L	07-Nov-19 22:43	1
PFOA	335-67-1	ND	1.47	4.88	9.78		B9K0019	06-Nov-19	0.256 L	07-Nov-19 22:43	1
PFNA	375-95-1	ND	1.47	4.88	9.78		B9K0019	06-Nov-19	0.256 L	07-Nov-19 22:43	1
PFOS	1763-23-1	ND	1.47	6.84	9.78		B9K0019	06-Nov-19	0.256 L	07-Nov-19 22:43	1
PFDA	335-76-2	ND	1.47	4.88	9.78		B9K0019	06-Nov-19	0.256 L	07-Nov-19 22:43	1
MeFOSAA	2355-31-9	ND	1.47	4.88	9.78		B9K0019	06-Nov-19	0.256 L	07-Nov-19 22:43	1
EtFOSAA	2991-50-6	ND	1.47	4.88	9.78		B9K0019	06-Nov-19	0.256 L	07-Nov-19 22:43	1
PFUnA	2058-94-8	ND	1.47	4.88	9.78		B9K0019	06-Nov-19	0.256 L	07-Nov-19 22:43	1
PFDoA	307-55-1	ND	1.47	4.88	9.78		B9K0019	06-Nov-19	0.256 L	07-Nov-19 22:43	1
PFTTrDA	72629-94-8	ND	1.47	4.88	9.78		B9K0019	06-Nov-19	0.256 L	07-Nov-19 22:43	1
PFTeDA	376-06-7	ND	1.47	4.88	9.78		B9K0019	06-Nov-19	0.256 L	07-Nov-19 22:43	1
HFPO-DA	13252-13-6	ND	1.47	4.88	9.78		B9K0019	06-Nov-19	0.256 L	07-Nov-19 22:43	1
ADONA	919005-14-4	ND	1.47	4.88	9.78		B9K0019	06-Nov-19	0.256 L	07-Nov-19 22:43	1
9CI-PF3ONS	756426-58-1	ND	1.47	4.88	9.78		B9K0019	06-Nov-19	0.256 L	07-Nov-19 22:43	1
11CI-PF3OUdS	763051-92-9	ND	1.47	4.88	9.78		B9K0019	06-Nov-19	0.256 L	07-Nov-19 22:43	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	91.5		70 - 130			B9K0019	06-Nov-19	0.256 L	07-Nov-19 22:43	1
13C2-PFDA	SURR	88.2		70 - 130			B9K0019	06-Nov-19	0.256 L	07-Nov-19 22:43	1
d5-EtFOSAA	SURR	93.1		70 - 130			B9K0019	06-Nov-19	0.256 L	07-Nov-19 22:43	1
13C3-HFPO-DA	SURR	93.0		70 - 130			B9K0019	06-Nov-19	0.256 L	07-Nov-19 22:43	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL

LOQ - Limit of quantitation

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

nw11/1/20

**DATA VALIDATION SUMMARY REPORT
NAS WHIDBEY ISLAND, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon
SDG: 1903884
Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
Site: NAS Whidbey Island, Residential Wells, CTO-4470, Washington
Date: January 15, 2020

PFAS			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-CV-1RW23P-1019	1903884-01	Water
2	WI-CV-2RW04-1019	1903884-02	Water
3	WI-CV-2FB04-1019	1903884-03	Water
4	WI-CV-1RW22-1019	1903884-04	Water
5	WI-CV-1FB22-1019	1903884-05	Water

A full data validation was performed on the analytical data for three water samples and two aqueous field blank samples collected on October 31, 2019 by CH2M Hill at the NAS Whidbey Island site in Washington. The samples were analyzed under the EPA Method "Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)".

Specific method references are as follows:

Analysis
PFAS

Method References
USEPA Method 537.1

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, DoD Final General Data Validation Guidelines, November 2019, and the USEPA Data Review and Validation Guidelines as follows:

- The USEPA "Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537," November 2018;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning

- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 10% of the detected results in the samples.

Data Usability Assessment

There were no rejections of data.

Overall the data are acceptable for the intended purposes. There were no qualifications.

Perfluorinated Alkyl Substances (PFAS)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC sample results are summarized in the table below.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WI-CV-2FB04-1019	None - ND	-	-	-
WI-CV-1FB22-1019	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- MS/MSD samples were not analyzed.

Laboratory Control Samples (LCS)

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- All criteria were met.

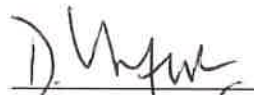
Field Duplicate Sample Precision

- Field duplicate results are summarized below. The precision was acceptable.

Compound	WI-CV-1RW23-1019 ng/L	WI-CV-1RW23P-1019 ng/L	RPD	Qualifier
PFBS	17.5	17.2	2%	None
PFHxA	41.4	39.9	4%	
PFHpA	10.6	10.3	3%	
PFHxS	59.3	61.9	4%	
PFOA	62.5	63.5	2%	

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed:



Nancy Weaver
Senior Chemist

Dated:

1/28/20

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

Sample ID: WI-CV-1RW23P-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903884-01	Column:	BEH C18
Project:	9000NVT3	Date Collected:	31-Oct-19 09:55	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	17.2	1.49	4.98	9.96		B9K0018	07-Nov-19	0.251 L	07-Nov-19 17:24	1
PFHxA	307-24-4	39.9	1.49	4.98	9.96		B9K0018	07-Nov-19	0.251 L	07-Nov-19 17:24	1
PFHpA	375-85-9	10.3	1.49	4.98	9.96		B9K0018	07-Nov-19	0.251 L	07-Nov-19 17:24	1
PFHxS	355-46-4	61.9	1.49	4.98	9.96		B9K0018	07-Nov-19	0.251 L	07-Nov-19 17:24	1
PFOA	335-67-1	63.5	1.49	4.98	9.96		B9K0018	07-Nov-19	0.251 L	07-Nov-19 17:24	1
PFNA	375-95-1	ND	1.49	4.98	9.96		B9K0018	07-Nov-19	0.251 L	07-Nov-19 17:24	1
PFOS	1763-23-1	ND	1.49	6.97	9.96		B9K0018	07-Nov-19	0.251 L	07-Nov-19 17:24	1
PFDA	335-76-2	ND	1.49	4.98	9.96		B9K0018	07-Nov-19	0.251 L	07-Nov-19 17:24	1
MeFOSAA	2355-31-9	ND	1.49	4.98	9.96		B9K0018	07-Nov-19	0.251 L	07-Nov-19 17:24	1
EtFOSAA	2991-50-6	ND	1.49	4.98	9.96		B9K0018	07-Nov-19	0.251 L	07-Nov-19 17:24	1
PFUnA	2058-94-8	ND	1.49	4.98	9.96		B9K0018	07-Nov-19	0.251 L	07-Nov-19 17:24	1
PFDoA	307-55-1	ND	1.49	4.98	9.96		B9K0018	07-Nov-19	0.251 L	07-Nov-19 17:24	1
PFTTrDA	72629-94-8	ND	1.49	4.98	9.96		B9K0018	07-Nov-19	0.251 L	07-Nov-19 17:24	1
PFTeDA	376-06-7	ND	1.49	4.98	9.96		B9K0018	07-Nov-19	0.251 L	07-Nov-19 17:24	1
HFPO-DA	13252-13-6	ND	1.49	4.98	9.96		B9K0018	07-Nov-19	0.251 L	07-Nov-19 17:24	1
ADONA	919005-14-4	ND	1.49	4.98	9.96		B9K0018	07-Nov-19	0.251 L	07-Nov-19 17:24	1
9CI-PF3ONS	756426-58-1	ND	1.49	4.98	9.96		B9K0018	07-Nov-19	0.251 L	07-Nov-19 17:24	1
11CI-PF3OUdS	763051-92-9	ND	1.49	4.98	9.96		B9K0018	07-Nov-19	0.251 L	07-Nov-19 17:24	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130		B9K0018	07-Nov-19	0.251 L	07-Nov-19 17:24	1
13C2-PFDA	SURR	100	70 - 130		B9K0018	07-Nov-19	0.251 L	07-Nov-19 17:24	1
d5-EtFOSAA	SURR	86.5	70 - 130		B9K0018	07-Nov-19	0.251 L	07-Nov-19 17:24	1
13C3-HFPO-DA	SURR	99.0	70 - 130		B9K0018	07-Nov-19	0.251 L	07-Nov-19 17:24	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw11/5/20

Sample ID: WI-CV-2RW04-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903884-02	Column:	BEH C18
Project:	9000NVT3	Date Collected:	31-Oct-19 11:00	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	19.4	1.51	5.04	10.1		B9K0018	07-Nov-19	0.248 L	07-Nov-19 17:35	1
PFHxA	307-24-4	4.12	1.51	5.04	10.1	J	B9K0018	07-Nov-19	0.248 L	07-Nov-19 17:35	1
PFHpA	375-85-9	2.23	1.51	5.04	10.1	J	B9K0018	07-Nov-19	0.248 L	07-Nov-19 17:35	1
PFHxS	355-46-4	19.9	1.51	5.04	10.1		B9K0018	07-Nov-19	0.248 L	07-Nov-19 17:35	1
PFOA	335-67-1	9.19	1.51	5.04	10.1	J	B9K0018	07-Nov-19	0.248 L	07-Nov-19 17:35	1
PFNA	375-95-1	ND	1.51	5.04	10.1		B9K0018	07-Nov-19	0.248 L	07-Nov-19 17:35	1
PFOS	1763-23-1	13.4	1.51	7.06	10.1		B9K0018	07-Nov-19	0.248 L	07-Nov-19 17:35	1
PFDA	335-76-2	ND	1.51	5.04	10.1		B9K0018	07-Nov-19	0.248 L	07-Nov-19 17:35	1
MeFOSAA	2355-31-9	ND	1.51	5.04	10.1		B9K0018	07-Nov-19	0.248 L	07-Nov-19 17:35	1
EtFOSAA	2991-50-6	ND	1.51	5.04	10.1		B9K0018	07-Nov-19	0.248 L	07-Nov-19 17:35	1
PFUnA	2058-94-8	ND	1.51	5.04	10.1		B9K0018	07-Nov-19	0.248 L	07-Nov-19 17:35	1
PFDoA	307-55-1	ND	1.51	5.04	10.1		B9K0018	07-Nov-19	0.248 L	07-Nov-19 17:35	1
PFTTrDA	72629-94-8	ND	1.51	5.04	10.1		B9K0018	07-Nov-19	0.248 L	07-Nov-19 17:35	1
PFTeDA	376-06-7	ND	1.51	5.04	10.1		B9K0018	07-Nov-19	0.248 L	07-Nov-19 17:35	1
HFPO-DA	13252-13-6	ND	1.51	5.04	10.1		B9K0018	07-Nov-19	0.248 L	07-Nov-19 17:35	1
ADONA	919005-14-4	ND	1.51	5.04	10.1		B9K0018	07-Nov-19	0.248 L	07-Nov-19 17:35	1
9CI-PF3ONS	756426-58-1	ND	1.51	5.04	10.1		B9K0018	07-Nov-19	0.248 L	07-Nov-19 17:35	1
11CI-PF3OUdS	763051-92-9	ND	1.51	5.04	10.1		B9K0018	07-Nov-19	0.248 L	07-Nov-19 17:35	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	91.2	70 - 130			B9K0018	07-Nov-19	0.248 L	07-Nov-19 17:35	1	
13C2-PFDA	SURR	91.3	70 - 130			B9K0018	07-Nov-19	0.248 L	07-Nov-19 17:35	1	
d5-EtFOSAA	SURR	92.5	70 - 130			B9K0018	07-Nov-19	0.248 L	07-Nov-19 17:35	1	
13C3-HFPO-DA	SURR	90.1	70 - 130			B9K0018	07-Nov-19	0.248 L	07-Nov-19 17:35	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 11/5/20

Sample ID: WI-CV-2FB04-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903884-03	Column:	BEH C18
Project:	9000NVT3	Date Collected:	31-Oct-19 11:00	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.50	5.00	10.0		B9K0018	07-Nov-19	0.250 L	07-Nov-19 17:45	1
PFHxA	307-24-4	ND	1.50	5.00	10.0		B9K0018	07-Nov-19	0.250 L	07-Nov-19 17:45	1
PFHpA	375-85-9	ND	1.50	5.00	10.0		B9K0018	07-Nov-19	0.250 L	07-Nov-19 17:45	1
PFHxS	355-46-4	ND	1.50	5.00	10.0		B9K0018	07-Nov-19	0.250 L	07-Nov-19 17:45	1
PFOA	335-67-1	ND	1.50	5.00	10.0		B9K0018	07-Nov-19	0.250 L	07-Nov-19 17:45	1
PFNA	375-95-1	ND	1.50	5.00	10.0		B9K0018	07-Nov-19	0.250 L	07-Nov-19 17:45	1
PFOS	1763-23-1	ND	1.50	7.00	10.0		B9K0018	07-Nov-19	0.250 L	07-Nov-19 17:45	1
PFDA	335-76-2	ND	1.50	5.00	10.0		B9K0018	07-Nov-19	0.250 L	07-Nov-19 17:45	1
MeFOSAA	2355-31-9	ND	1.50	5.00	10.0		B9K0018	07-Nov-19	0.250 L	07-Nov-19 17:45	1
EtFOSAA	2991-50-6	ND	1.50	5.00	10.0		B9K0018	07-Nov-19	0.250 L	07-Nov-19 17:45	1
PFUnA	2058-94-8	ND	1.50	5.00	10.0		B9K0018	07-Nov-19	0.250 L	07-Nov-19 17:45	1
PFDoA	307-55-1	ND	1.50	5.00	10.0		B9K0018	07-Nov-19	0.250 L	07-Nov-19 17:45	1
PFTTrDA	72629-94-8	ND	1.50	5.00	10.0		B9K0018	07-Nov-19	0.250 L	07-Nov-19 17:45	1
PFTeDA	376-06-7	ND	1.50	5.00	10.0		B9K0018	07-Nov-19	0.250 L	07-Nov-19 17:45	1
HFPO-DA	13252-13-6	ND	1.50	5.00	10.0		B9K0018	07-Nov-19	0.250 L	07-Nov-19 17:45	1
ADONA	919005-14-4	ND	1.50	5.00	10.0		B9K0018	07-Nov-19	0.250 L	07-Nov-19 17:45	1
9CI-PF3ONS	756426-58-1	ND	1.50	5.00	10.0		B9K0018	07-Nov-19	0.250 L	07-Nov-19 17:45	1
11CI-PF3OUdS	763051-92-9	ND	1.50	5.00	10.0		B9K0018	07-Nov-19	0.250 L	07-Nov-19 17:45	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103		70 - 130			B9K0018	07-Nov-19	0.250 L	07-Nov-19 17:45	1
13C2-PFDA	SURR	101		70 - 130			B9K0018	07-Nov-19	0.250 L	07-Nov-19 17:45	1
d5-EtFOSAA	SURR	110		70 - 130			B9K0018	07-Nov-19	0.250 L	07-Nov-19 17:45	1
13C3-HFPO-DA	SURR	96.5		70 - 130			B9K0018	07-Nov-19	0.250 L	07-Nov-19 17:45	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

revised

Sample ID: WI-CV-1RW22-1019 **EPA Method 537.1**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903884-04	Column:	BEH C18
Project:	9000NVT3	Date Collected:	31-Oct-19 11:20	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.52	5.06	10.1		B9K0018	07-Nov-19	0.247 L	07-Nov-19 17:56	1
PFHxA	307-24-4	ND	1.52	5.06	10.1		B9K0018	07-Nov-19	0.247 L	07-Nov-19 17:56	1
PFHpA	375-85-9	ND	1.52	5.06	10.1		B9K0018	07-Nov-19	0.247 L	07-Nov-19 17:56	1
PFHxS	355-46-4	ND	1.52	5.06	10.1		B9K0018	07-Nov-19	0.247 L	07-Nov-19 17:56	1
PFOA	335-67-1	ND	1.52	5.06	10.1		B9K0018	07-Nov-19	0.247 L	07-Nov-19 17:56	1
PFNA	375-95-1	ND	1.52	5.06	10.1		B9K0018	07-Nov-19	0.247 L	07-Nov-19 17:56	1
PFOS	1763-23-1	ND	1.52	7.09	10.1		B9K0018	07-Nov-19	0.247 L	07-Nov-19 17:56	1
PFDA	335-76-2	ND	1.52	5.06	10.1		B9K0018	07-Nov-19	0.247 L	07-Nov-19 17:56	1
MeFOSAA	2355-31-9	ND	1.52	5.06	10.1		B9K0018	07-Nov-19	0.247 L	07-Nov-19 17:56	1
EtFOSAA	2991-50-6	ND	1.52	5.06	10.1		B9K0018	07-Nov-19	0.247 L	07-Nov-19 17:56	1
PFUnA	2058-94-8	ND	1.52	5.06	10.1		B9K0018	07-Nov-19	0.247 L	07-Nov-19 17:56	1
PFDoA	307-55-1	ND	1.52	5.06	10.1		B9K0018	07-Nov-19	0.247 L	07-Nov-19 17:56	1
PFTTrDA	72629-94-8	ND	1.52	5.06	10.1		B9K0018	07-Nov-19	0.247 L	07-Nov-19 17:56	1
PFTeDA	376-06-7	ND	1.52	5.06	10.1		B9K0018	07-Nov-19	0.247 L	07-Nov-19 17:56	1
HFPO-DA	13252-13-6	ND	1.52	5.06	10.1		B9K0018	07-Nov-19	0.247 L	07-Nov-19 17:56	1
ADONA	919005-14-4	ND	1.52	5.06	10.1		B9K0018	07-Nov-19	0.247 L	07-Nov-19 17:56	1
9CI-PF3ONS	756426-58-1	ND	1.52	5.06	10.1		B9K0018	07-Nov-19	0.247 L	07-Nov-19 17:56	1
11CI-PF3OUdS	763051-92-9	ND	1.52	5.06	10.1		B9K0018	07-Nov-19	0.247 L	07-Nov-19 17:56	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	108	70 - 130		B9K0018	07-Nov-19	0.247 L	07-Nov-19 17:56	1
13C2-PFDA	SURR	102	70 - 130		B9K0018	07-Nov-19	0.247 L	07-Nov-19 17:56	1
d5-EtFOSAA	SURR	87.5	70 - 130		B9K0018	07-Nov-19	0.247 L	07-Nov-19 17:56	1
13C3-HFPO-DA	SURR	96.3	70 - 130		B9K0018	07-Nov-19	0.247 L	07-Nov-19 17:56	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

ms 11/5/20

Sample ID: WI-CV-1FB22-1019

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903884-05	Column:	BEH C18
Project:	9000NVT3	Date Collected:	31-Oct-19 11:20	Date Received:	01-Nov-19 09:57		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.48	4.94	9.88		B9K0018	07-Nov-19	0.253 L	07-Nov-19 18:07	1
PFHxA	307-24-4	ND	1.48	4.94	9.88		B9K0018	07-Nov-19	0.253 L	07-Nov-19 18:07	1
PFHpA	375-85-9	ND	1.48	4.94	9.88		B9K0018	07-Nov-19	0.253 L	07-Nov-19 18:07	1
PFHxS	355-46-4	ND	1.48	4.94	9.88		B9K0018	07-Nov-19	0.253 L	07-Nov-19 18:07	1
PFOA	335-67-1	ND	1.48	4.94	9.88		B9K0018	07-Nov-19	0.253 L	07-Nov-19 18:07	1
PFNA	375-95-1	ND	1.48	4.94	9.88		B9K0018	07-Nov-19	0.253 L	07-Nov-19 18:07	1
PFOS	1763-23-1	ND	1.48	6.92	9.88		B9K0018	07-Nov-19	0.253 L	07-Nov-19 18:07	1
PFDA	335-76-2	ND	1.48	4.94	9.88		B9K0018	07-Nov-19	0.253 L	07-Nov-19 18:07	1
MeFOSAA	2355-31-9	ND	1.48	4.94	9.88		B9K0018	07-Nov-19	0.253 L	07-Nov-19 18:07	1
EtFOSAA	2991-50-6	ND	1.48	4.94	9.88		B9K0018	07-Nov-19	0.253 L	07-Nov-19 18:07	1
PFUnA	2058-94-8	ND	1.48	4.94	9.88		B9K0018	07-Nov-19	0.253 L	07-Nov-19 18:07	1
PFDoA	307-55-1	ND	1.48	4.94	9.88		B9K0018	07-Nov-19	0.253 L	07-Nov-19 18:07	1
PFTTrDA	72629-94-8	ND	1.48	4.94	9.88		B9K0018	07-Nov-19	0.253 L	07-Nov-19 18:07	1
PFTeDA	376-06-7	ND	1.48	4.94	9.88		B9K0018	07-Nov-19	0.253 L	07-Nov-19 18:07	1
HFPO-DA	13252-13-6	ND	1.48	4.94	9.88		B9K0018	07-Nov-19	0.253 L	07-Nov-19 18:07	1
ADONA	919005-14-4	ND	1.48	4.94	9.88		B9K0018	07-Nov-19	0.253 L	07-Nov-19 18:07	1
9CI-PF3ONS	756426-58-1	ND	1.48	4.94	9.88		B9K0018	07-Nov-19	0.253 L	07-Nov-19 18:07	1
11CI-PF3OUdS	763051-92-9	ND	1.48	4.94	9.88		B9K0018	07-Nov-19	0.253 L	07-Nov-19 18:07	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	104	70 - 130			B9K0018	07-Nov-19	0.253 L	07-Nov-19 18:07	1	
13C2-PFDA	SURR	106	70 - 130			B9K0018	07-Nov-19	0.253 L	07-Nov-19 18:07	1	
d5-EtFOSAA	SURR	106	70 - 130			B9K0018	07-Nov-19	0.253 L	07-Nov-19 18:07	1	
13C3-HFPO-DA	SURR	101	70 - 130			B9K0018	07-Nov-19	0.253 L	07-Nov-19 18:07	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL

LOQ - Limit of quantitation

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

new 11/15/20

**DATA VALIDATION SUMMARY REPORT
NAS WHIDBEY ISLAND, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon
 SDG: 1903914
 Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
 Site: NAS Whidbey Island, Residential Wells, CTO-4470, Washington
 Date: January 15, 2020

PFAS			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-CV-1RW21-1119	1903914-01	Water
2	WI-CV-1RW21P-1119	1903914-02	Water
3	WI-CV-1FB21-1119	1903914-03	Water
4	WI-CV-3RW17-1119	1903914-04	Water
4MS	WI-CV-3RW17-1119MS	1903914-04MS	Water
4MSD	WI-CV-3RW17-1119MSD	1903914-04MSD	Water
5	WI-CV-1RW40-1119	1903914-05	Water
6	WI-CV-1RW40P-1119	1903914-06	Water
7	WI-CV-1FB40-1119	1903914-07	Water
10	WI-AF-1RW32-1119	1903914-10	Water
10MS	WI-AF-1RW32-1119MS	1903914-10MS	Water
10MSD	WI-AF-1RW32-1119MSD	1903914-10MSD	Water
11	WI-AF-1FB32-1119	1903914-11	Water
12	WI-AF-1RW33-1119	1903914-12	Water
13	WI-AF-1FB33-1119	1903914-13	Water
14	WI-AF-1RW68-1119	1903914-14	Water
15	WI-CV-3FB17-1119	1903914-15	Water

A full data validation was performed on the analytical data for eight water samples and five aqueous field blank samples collected on November 1-4, 2019 by CH2M Hill at the NAS Whidbey Island site in Washington. The samples were analyzed under the EPA Method “Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)”.

Specific method references are as follows:

Analysis
PFAS

Method References
USEPA Method 537.1

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, DoD Final General Data Validation Guidelines, November 2019, and the USEPA Data Review and Validation Guidelines as follows:

- The USEPA “Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537,” November 2018;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 10% of the detected results in the samples.

Data Usability Assessment

There were no serious deficiencies of data.

Overall the data are acceptable for the intended purposes as qualified for the deficiencies detailed in this report.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contaminations and actions from other exceedances of QC criteria.

Perfluorinated Alkyl Substances (PFAS)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC sample results are summarized in the table below.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WI-CV-1FB21-1119	None - ND	-	-	-
WI-CV-1FB40-1119	None - ND	-	-	-
WI-AF-1FB32-1119	None - ND	-	-	-
WI-AF-1FB33-1119	None - ND	-	-	-
WI-CV-3FB17-1119	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD samples exhibited acceptable percent recoveries (%R) and RPD values except for the following.

MS/MSD Sample ID	Compound	MS %R/MSD %R/ RPD	Qualifier
10	PFBS	228%/OK/59.1	J
	PFHxA	190%/229%/OK	
	PFHxS	2410%/1610%/39.8	None - 4X Rule Applies
	PFOA	134%/148%/OK	J
	PFOS	12700%/6980%/58.1	None - 4X Rule Applies
	9C1-PF3ONS	220%/213%/OK	None - Sample ND
	11C1-PF3OUdS	215%/208%/OK	

Laboratory Control Samples (LCS)

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- EDS Sample 10 was analyzed at a 50X dilution due to high concentrations of two compounds. The reporting limits were adjusted accordingly. No action was required.

Field Duplicate Sample Precision

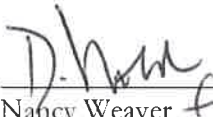
- Field duplicate results are summarized below. The precision was acceptable.

Compound	WI-CV-1RW21-1119 ng/L	WI-CV-1RW21P-1119 ng/L	RPD	Qualifier
None	ND	ND	-	-

Compound	WI-CV-1RW40-1119 ng/L	WI-CV-1RW40P-1119 ng/L	RPD	Qualifier
None	ND	ND	-	-

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed:



Nancy Weaver
Senior Chemist

Dated:

1/19/20

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

Sample ID: WI-CV-1RW21-1119 **EPA Method 537.1**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903914-01	Column:	BEH C18
Project:	9000NVT3	Date Collected:	01-Nov-19 11:10	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.56	5.19	10.4		B9K0071	12-Nov-19	0.241 L	13-Nov-19 17:39	1
PFHxA	307-24-4	ND	1.56	5.19	10.4		B9K0071	12-Nov-19	0.241 L	13-Nov-19 17:39	1
PFHpA	375-85-9	ND	1.56	5.19	10.4		B9K0071	12-Nov-19	0.241 L	13-Nov-19 17:39	1
PFHxS	355-46-4	ND	1.56	5.19	10.4		B9K0071	12-Nov-19	0.241 L	13-Nov-19 17:39	1
PFOA	335-67-1	ND	1.56	5.19	10.4		B9K0071	12-Nov-19	0.241 L	13-Nov-19 17:39	1
PFNA	375-95-1	ND	1.56	5.19	10.4		B9K0071	12-Nov-19	0.241 L	13-Nov-19 17:39	1
PFOS	1763-23-1	ND	1.56	7.26	10.4		B9K0071	12-Nov-19	0.241 L	13-Nov-19 17:39	1
PFDA	335-76-2	ND	1.56	5.19	10.4		B9K0071	12-Nov-19	0.241 L	13-Nov-19 17:39	1
MeFOSAA	2355-31-9	ND	1.56	5.19	10.4		B9K0071	12-Nov-19	0.241 L	13-Nov-19 17:39	1
EtFOSAA	2991-50-6	ND	1.56	5.19	10.4		B9K0071	12-Nov-19	0.241 L	13-Nov-19 17:39	1
PFUnA	2058-94-8	ND	1.56	5.19	10.4		B9K0071	12-Nov-19	0.241 L	13-Nov-19 17:39	1
PFDoA	307-55-1	ND	1.56	5.19	10.4		B9K0071	12-Nov-19	0.241 L	13-Nov-19 17:39	1
PFTTrDA	72629-94-8	ND	1.56	5.19	10.4		B9K0071	12-Nov-19	0.241 L	13-Nov-19 17:39	1
PFTeDA	376-06-7	ND	1.56	5.19	10.4		B9K0071	12-Nov-19	0.241 L	13-Nov-19 17:39	1
HFPO-DA	13252-13-6	ND	1.56	5.19	10.4		B9K0071	12-Nov-19	0.241 L	13-Nov-19 17:39	1
ADONA	919005-14-4	ND	1.56	5.19	10.4		B9K0071	12-Nov-19	0.241 L	13-Nov-19 17:39	1
9CI-PF3ONS	756426-58-1	ND	1.56	5.19	10.4		B9K0071	12-Nov-19	0.241 L	13-Nov-19 17:39	1
11CI-PF3OUdS	763051-92-9	ND	1.56	5.19	10.4		B9K0071	12-Nov-19	0.241 L	13-Nov-19 17:39	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	115	70 - 130			B9K0071	12-Nov-19	0.241 L	13-Nov-19 17:39	1	
13C2-PFDA	SURR	102	70 - 130			B9K0071	12-Nov-19	0.241 L	13-Nov-19 17:39	1	
d5-EtFOSAA	SURR	87.5	70 - 130			B9K0071	12-Nov-19	0.241 L	13-Nov-19 17:39	1	
13C3-HFPO-DA	SURR	104	70 - 130			B9K0071	12-Nov-19	0.241 L	13-Nov-19 17:39	1	

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

NW115120

Sample ID: WI-CV-1RW21P-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903914-02	Column:	BEH C18
Project:	9000NVT3	Date Collected:	01-Nov-19 11:15	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.55	5.17	10.3		B9K0071	12-Nov-19	0.242 L	13-Nov-19 17:49	1
PFHxA	307-24-4	ND	1.55	5.17	10.3		B9K0071	12-Nov-19	0.242 L	13-Nov-19 17:49	1
PFHpA	375-85-9	ND	1.55	5.17	10.3		B9K0071	12-Nov-19	0.242 L	13-Nov-19 17:49	1
PFHxS	355-46-4	ND	1.55	5.17	10.3		B9K0071	12-Nov-19	0.242 L	13-Nov-19 17:49	1
PFOA	335-67-1	ND	1.55	5.17	10.3		B9K0071	12-Nov-19	0.242 L	13-Nov-19 17:49	1
PFNA	375-95-1	ND	1.55	5.17	10.3		B9K0071	12-Nov-19	0.242 L	13-Nov-19 17:49	1
PFOS	1763-23-1	ND	1.55	7.23	10.3		B9K0071	12-Nov-19	0.242 L	13-Nov-19 17:49	1
PFDA	335-76-2	ND	1.55	5.17	10.3		B9K0071	12-Nov-19	0.242 L	13-Nov-19 17:49	1
MeFOSAA	2355-31-9	ND	1.55	5.17	10.3		B9K0071	12-Nov-19	0.242 L	13-Nov-19 17:49	1
EtFOSAA	2991-50-6	ND	1.55	5.17	10.3		B9K0071	12-Nov-19	0.242 L	13-Nov-19 17:49	1
PFUnA	2058-94-8	ND	1.55	5.17	10.3		B9K0071	12-Nov-19	0.242 L	13-Nov-19 17:49	1
PFDoA	307-55-1	ND	1.55	5.17	10.3		B9K0071	12-Nov-19	0.242 L	13-Nov-19 17:49	1
PFTrDA	72629-94-8	ND	1.55	5.17	10.3		B9K0071	12-Nov-19	0.242 L	13-Nov-19 17:49	1
PFTeDA	376-06-7	ND	1.55	5.17	10.3		B9K0071	12-Nov-19	0.242 L	13-Nov-19 17:49	1
HFPO-DA	13252-13-6	ND	1.55	5.17	10.3		B9K0071	12-Nov-19	0.242 L	13-Nov-19 17:49	1
ADONA	919005-14-4	ND	1.55	5.17	10.3		B9K0071	12-Nov-19	0.242 L	13-Nov-19 17:49	1
9CI-PF3ONS	756426-58-1	ND	1.55	5.17	10.3		B9K0071	12-Nov-19	0.242 L	13-Nov-19 17:49	1
11CI-PF3OUdS	763051-92-9	ND	1.55	5.17	10.3		B9K0071	12-Nov-19	0.242 L	13-Nov-19 17:49	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	103	70 - 130			B9K0071	12-Nov-19	0.242 L	13-Nov-19 17:49	1	
13C2-PFDA	SURR	97.0	70 - 130			B9K0071	12-Nov-19	0.242 L	13-Nov-19 17:49	1	
d5-EtFOSAA	SURR	94.7	70 - 130			B9K0071	12-Nov-19	0.242 L	13-Nov-19 17:49	1	
13C3-HFPO-DA	SURR	95.0	70 - 130			B9K0071	12-Nov-19	0.242 L	13-Nov-19 17:49	1	

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL

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

rw 11/15/20

Sample ID: WI-CV-1FB21-1119 **EPA Method 537.1**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903914-03	Column:	BEH C18
Project:	9000NVT3	Date Collected:	01-Nov-19 11:10	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:00	1
PFHxA	307-24-4	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:00	1
PFHpA	375-85-9	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:00	1
PFHxS	355-46-4	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:00	1
PFOA	335-67-1	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:00	1
PFNA	375-95-1	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:00	1
PFOS	1763-23-1	ND	1.51	7.06	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:00	1
PFDA	335-76-2	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:00	1
MeFOSAA	2355-31-9	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:00	1
EtFOSAA	2991-50-6	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:00	1
PFUnA	2058-94-8	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:00	1
PFDoA	307-55-1	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:00	1
PFTTrDA	72629-94-8	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:00	1
PFTeDA	376-06-7	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:00	1
HFPO-DA	13252-13-6	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:00	1
ADONA	919005-14-4	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:00	1
9CI-PF3ONS	756426-58-1	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:00	1
11CI-PF3OUdS	763051-92-9	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:00	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	119		70 - 130			B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:00	1
13C2-PFDA	SURR	114		70 - 130			B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:00	1
d5-EtFOSAA	SURR	110		70 - 130			B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:00	1
13C3-HFPO-DA	SURR	115		70 - 130			B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:00	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

nr/11/15/20

Sample ID: WI-CV-3RW17-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903914-04	Column:	BEH C18
Project:	9000NVT3	Date Collected:	01-Nov-19 10:20	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.59	5.30	10.6		B9K0071	12-Nov-19	0.236 L	13-Nov-19 18:11	1
PFHxA	307-24-4	ND	1.59	5.30	10.6		B9K0071	12-Nov-19	0.236 L	13-Nov-19 18:11	1
PFHpA	375-85-9	ND	1.59	5.30	10.6		B9K0071	12-Nov-19	0.236 L	13-Nov-19 18:11	1
PFHxS	355-46-4	ND	1.59	5.30	10.6		B9K0071	12-Nov-19	0.236 L	13-Nov-19 18:11	1
PFOA	335-67-1	ND	1.59	5.30	10.6		B9K0071	12-Nov-19	0.236 L	13-Nov-19 18:11	1
PFNA	375-95-1	ND	1.59	5.30	10.6		B9K0071	12-Nov-19	0.236 L	13-Nov-19 18:11	1
PFOS	1763-23-1	ND	1.59	7.42	10.6		B9K0071	12-Nov-19	0.236 L	13-Nov-19 18:11	1
PFDA	335-76-2	ND	1.59	5.30	10.6		B9K0071	12-Nov-19	0.236 L	13-Nov-19 18:11	1
MeFOSAA	2355-31-9	ND	1.59	5.30	10.6		B9K0071	12-Nov-19	0.236 L	13-Nov-19 18:11	1
EtFOSAA	2991-50-6	ND	1.59	5.30	10.6		B9K0071	12-Nov-19	0.236 L	13-Nov-19 18:11	1
PFUnA	2058-94-8	ND	1.59	5.30	10.6		B9K0071	12-Nov-19	0.236 L	13-Nov-19 18:11	1
PFDoA	307-55-1	ND	1.59	5.30	10.6		B9K0071	12-Nov-19	0.236 L	13-Nov-19 18:11	1
PFTTrDA	72629-94-8	ND	1.59	5.30	10.6		B9K0071	12-Nov-19	0.236 L	13-Nov-19 18:11	1
PFTeDA	376-06-7	ND	1.59	5.30	10.6		B9K0071	12-Nov-19	0.236 L	13-Nov-19 18:11	1
HFPO-DA	13252-13-6	ND	1.59	5.30	10.6		B9K0071	12-Nov-19	0.236 L	13-Nov-19 18:11	1
ADONA	919005-14-4	ND	1.59	5.30	10.6		B9K0071	12-Nov-19	0.236 L	13-Nov-19 18:11	1
9CI-PF3ONS	756426-58-1	ND	1.59	5.30	10.6		B9K0071	12-Nov-19	0.236 L	13-Nov-19 18:11	1
11CI-PF3OUdS	763051-92-9	ND	1.59	5.30	10.6		B9K0071	12-Nov-19	0.236 L	13-Nov-19 18:11	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	96.4	70 - 130			B9K0071	12-Nov-19	0.236 L	13-Nov-19 18:11	1	
13C2-PFDA	SURR	91.9	70 - 130			B9K0071	12-Nov-19	0.236 L	13-Nov-19 18:11	1	
d5-EtFOSAA	SURR	87.9	70 - 130			B9K0071	12-Nov-19	0.236 L	13-Nov-19 18:11	1	
13C3-HFPO-DA	SURR	93.9	70 - 130			B9K0071	12-Nov-19	0.236 L	13-Nov-19 18:11	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 11/5/20

Sample ID: WI-CV-1RW40-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903914-05	Column:	BEH C18
Project:	9000NVT3	Date Collected:	01-Nov-19 08:30	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.51	5.02	10.0		B9K0071	12-Nov-19	0.249 L	13-Nov-19 18:21	1
PFHxA	307-24-4	ND	1.51	5.02	10.0		B9K0071	12-Nov-19	0.249 L	13-Nov-19 18:21	1
PFHpA	375-85-9	ND	1.51	5.02	10.0		B9K0071	12-Nov-19	0.249 L	13-Nov-19 18:21	1
PFHxS	355-46-4	ND	1.51	5.02	10.0		B9K0071	12-Nov-19	0.249 L	13-Nov-19 18:21	1
PFOA	335-67-1	ND	1.51	5.02	10.0		B9K0071	12-Nov-19	0.249 L	13-Nov-19 18:21	1
PFNA	375-95-1	ND	1.51	5.02	10.0		B9K0071	12-Nov-19	0.249 L	13-Nov-19 18:21	1
PFOS	1763-23-1	ND	1.51	7.03	10.0		B9K0071	12-Nov-19	0.249 L	13-Nov-19 18:21	1
PFDA	335-76-2	ND	1.51	5.02	10.0		B9K0071	12-Nov-19	0.249 L	13-Nov-19 18:21	1
MeFOSAA	2355-31-9	ND	1.51	5.02	10.0		B9K0071	12-Nov-19	0.249 L	13-Nov-19 18:21	1
EtFOSAA	2991-50-6	ND	1.51	5.02	10.0		B9K0071	12-Nov-19	0.249 L	13-Nov-19 18:21	1
PFUnA	2058-94-8	ND	1.51	5.02	10.0		B9K0071	12-Nov-19	0.249 L	13-Nov-19 18:21	1
PFDoA	307-55-1	ND	1.51	5.02	10.0		B9K0071	12-Nov-19	0.249 L	13-Nov-19 18:21	1
PFTTrDA	72629-94-8	ND	1.51	5.02	10.0		B9K0071	12-Nov-19	0.249 L	13-Nov-19 18:21	1
PFTeDA	376-06-7	ND	1.51	5.02	10.0		B9K0071	12-Nov-19	0.249 L	13-Nov-19 18:21	1
HFPO-DA	13252-13-6	ND	1.51	5.02	10.0		B9K0071	12-Nov-19	0.249 L	13-Nov-19 18:21	1
ADONA	919005-14-4	ND	1.51	5.02	10.0		B9K0071	12-Nov-19	0.249 L	13-Nov-19 18:21	1
9CI-PF3ONS	756426-58-1	ND	1.51	5.02	10.0		B9K0071	12-Nov-19	0.249 L	13-Nov-19 18:21	1
11CI-PF3OUdS	763051-92-9	ND	1.51	5.02	10.0		B9K0071	12-Nov-19	0.249 L	13-Nov-19 18:21	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	107	70 - 130		B9K0071	12-Nov-19	0.249 L	13-Nov-19 18:21	1
13C2-PFDA	SURR	103	70 - 130		B9K0071	12-Nov-19	0.249 L	13-Nov-19 18:21	1
d5-EtFOSAA	SURR	92.6	70 - 130		B9K0071	12-Nov-19	0.249 L	13-Nov-19 18:21	1
13C3-HFPO-DA	SURR	97.8	70 - 130		B9K0071	12-Nov-19	0.249 L	13-Nov-19 18:21	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

revised

Sample ID: WI-CV-1RW40P-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903914-06	Column:	BEH C18
Project:	9000NVT3	Date Collected:	01-Nov-19 08:35	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.50	4.98	9.97		B9K0071	12-Nov-19	0.251 L	13-Nov-19 18:32	1
PFHxA	307-24-4	ND	1.50	4.98	9.97		B9K0071	12-Nov-19	0.251 L	13-Nov-19 18:32	1
PFHpA	375-85-9	ND	1.50	4.98	9.97		B9K0071	12-Nov-19	0.251 L	13-Nov-19 18:32	1
PFHxS	355-46-4	ND	1.50	4.98	9.97		B9K0071	12-Nov-19	0.251 L	13-Nov-19 18:32	1
PFOA	335-67-1	ND	1.50	4.98	9.97		B9K0071	12-Nov-19	0.251 L	13-Nov-19 18:32	1
PFNA	375-95-1	ND	1.50	4.98	9.97		B9K0071	12-Nov-19	0.251 L	13-Nov-19 18:32	1
PFOS	1763-23-1	ND	1.50	6.97	9.97		B9K0071	12-Nov-19	0.251 L	13-Nov-19 18:32	1
PFDA	335-76-2	ND	1.50	4.98	9.97		B9K0071	12-Nov-19	0.251 L	13-Nov-19 18:32	1
MeFOSAA	2355-31-9	ND	1.50	4.98	9.97		B9K0071	12-Nov-19	0.251 L	13-Nov-19 18:32	1
EtFOSAA	2991-50-6	ND	1.50	4.98	9.97		B9K0071	12-Nov-19	0.251 L	13-Nov-19 18:32	1
PFUnA	2058-94-8	ND	1.50	4.98	9.97		B9K0071	12-Nov-19	0.251 L	13-Nov-19 18:32	1
PFDoA	307-55-1	ND	1.50	4.98	9.97		B9K0071	12-Nov-19	0.251 L	13-Nov-19 18:32	1
PFTTrDA	72629-94-8	ND	1.50	4.98	9.97		B9K0071	12-Nov-19	0.251 L	13-Nov-19 18:32	1
PFTeDA	376-06-7	ND	1.50	4.98	9.97		B9K0071	12-Nov-19	0.251 L	13-Nov-19 18:32	1
HFPO-DA	13252-13-6	ND	1.50	4.98	9.97		B9K0071	12-Nov-19	0.251 L	13-Nov-19 18:32	1
ADONA	919005-14-4	ND	1.50	4.98	9.97		B9K0071	12-Nov-19	0.251 L	13-Nov-19 18:32	1
9CI-PF3ONS	756426-58-1	ND	1.50	4.98	9.97		B9K0071	12-Nov-19	0.251 L	13-Nov-19 18:32	1
11CI-PF3OUdS	763051-92-9	ND	1.50	4.98	9.97		B9K0071	12-Nov-19	0.251 L	13-Nov-19 18:32	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	109	70 - 130		B9K0071	12-Nov-19	0.251 L	13-Nov-19 18:32	1
13C2-PFDA	SURR	104	70 - 130		B9K0071	12-Nov-19	0.251 L	13-Nov-19 18:32	1
d5-EtFOSAA	SURR	98.3	70 - 130		B9K0071	12-Nov-19	0.251 L	13-Nov-19 18:32	1
13C3-HFPO-DA	SURR	99.1	70 - 130		B9K0071	12-Nov-19	0.251 L	13-Nov-19 18:32	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

11/15/20

Sample ID: WI-CV-1FB40-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903914-07	Column:	BEH C18
Project:	9000NVT3	Date Collected:	01-Nov-19 08:30	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:43	1
PFHxA	307-24-4	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:43	1
PFHpA	375-85-9	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:43	1
PFHxS	355-46-4	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:43	1
PFOA	335-67-1	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:43	1
PFNA	375-95-1	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:43	1
PFOS	1763-23-1	ND	1.51	7.06	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:43	1
PFDA	335-76-2	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:43	1
MeFOSAA	2355-31-9	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:43	1
EtFOSAA	2991-50-6	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:43	1
PFUnA	2058-94-8	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:43	1
PFDoA	307-55-1	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:43	1
PFTTrDA	72629-94-8	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:43	1
PFTeDA	376-06-7	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:43	1
HFPO-DA	13252-13-6	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:43	1
ADONA	919005-14-4	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:43	1
9CI-PF3ONS	756426-58-1	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:43	1
11CI-PF3OUdS	763051-92-9	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:43	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	108		70 - 130			B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:43	1
13C2-PFDA	SURR	99.9		70 - 130			B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:43	1
d5-EtFOSAA	SURR	98.4		70 - 130			B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:43	1
13C3-HFPO-DA	SURR	105		70 - 130			B9K0071	12-Nov-19	0.248 L	13-Nov-19 18:43	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw 11/5/20

Sample ID: WI-AF-1RW32-1119 **EPA Method 537.1**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903914-10	Column:	BEH C18
Project:	9000NVT3	Date Collected:	04-Nov-19 10:00	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	312 J	1.56	5.21	10.4		B9K0071	12-Nov-19	0.240 L	06-Dec-19 23:59	1
PFHxA	307-24-4	216 J	1.56	5.21	10.4		B9K0071	12-Nov-19	0.240 L	06-Dec-19 23:59	1
PFHpA	375-85-9	21.5	1.56	5.21	10.4		B9K0071	12-Nov-19	0.240 L	06-Dec-19 23:59	1
PFHxS	355-46-4	1600	78.1	260	521	P	B9K0071	12-Nov-19	0.240 L	14-Nov-19 19:01	50
PFOA	335-67-1	51.7 J	1.56	5.21	10.4		B9K0071	12-Nov-19	0.240 L	06-Dec-19 23:59	1
PFNA	375-95-1	ND	1.56	5.21	10.4		B9K0071	12-Nov-19	0.240 L	06-Dec-19 23:59	1
PFOS	1763-23-1	7690	78.1	365	521	P	B9K0071	12-Nov-19	0.240 L	14-Nov-19 19:01	50
PFDA	335-76-2	ND	1.56	5.21	10.4		B9K0071	12-Nov-19	0.240 L	06-Dec-19 23:59	1
MeFOSAA	2355-31-9	ND	1.56	5.21	10.4		B9K0071	12-Nov-19	0.240 L	06-Dec-19 23:59	1
EtFOSAA	2991-50-6	ND	1.56	5.21	10.4		B9K0071	12-Nov-19	0.240 L	06-Dec-19 23:59	1
PFUnA	2058-94-8	ND	1.56	5.21	10.4		B9K0071	12-Nov-19	0.240 L	06-Dec-19 23:59	1
PFDoA	307-55-1	ND	1.56	5.21	10.4		B9K0071	12-Nov-19	0.240 L	06-Dec-19 23:59	1
PFTTrDA	72629-94-8	ND	1.56	5.21	10.4		B9K0071	12-Nov-19	0.240 L	06-Dec-19 23:59	1
PFTeDA	376-06-7	ND	1.56	5.21	10.4		B9K0071	12-Nov-19	0.240 L	06-Dec-19 23:59	1
HFPO-DA	13252-13-6	ND	1.56	5.21	10.4		B9K0071	12-Nov-19	0.240 L	06-Dec-19 23:59	1
ADONA	919005-14-4	ND	1.56	5.21	10.4		B9K0071	12-Nov-19	0.240 L	06-Dec-19 23:59	1
9CI-PF3ONS	756426-58-1	ND	1.56	5.21	10.4		B9K0071	12-Nov-19	0.240 L	06-Dec-19 23:59	1
11CI-PF3OUdS	763051-92-9	ND	1.56	5.21	10.4		B9K0071	12-Nov-19	0.240 L	06-Dec-19 23:59	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	103	70 - 130			B9K0071	12-Nov-19	0.240 L	06-Dec-19 23:59	1	
13C2-PFDA	SURR	101	70 - 130			B9K0071	12-Nov-19	0.240 L	06-Dec-19 23:59	1	
d5-EtFOSAA	SURR	88.9	70 - 130			B9K0071	12-Nov-19	0.240 L	06-Dec-19 23:59	1	
13C3-HFPO-DA	SURR	104	70 - 130			B9K0071	12-Nov-19	0.240 L	06-Dec-19 23:59	1	

MSH
MSH
MSH

DL - Detection Limit LOD - Limit of Detection Results reported to the DL
 LOQ - Limit of quantitation When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

willis120

Sample ID: WI-AF-1FB32-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903914-11	Column:	BEH C18
Project:	9000NVT3	Date Collected:	04-Nov-19 10:00	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.49	4.96	9.92		B9K0071	12-Nov-19	0.252 L	13-Nov-19 19:57	1
PFHxA	307-24-4	ND	1.49	4.96	9.92		B9K0071	12-Nov-19	0.252 L	13-Nov-19 19:57	1
PFHpA	375-85-9	ND	1.49	4.96	9.92		B9K0071	12-Nov-19	0.252 L	13-Nov-19 19:57	1
PFHxS	355-46-4	ND	1.49	4.96	9.92		B9K0071	12-Nov-19	0.252 L	13-Nov-19 19:57	1
PFOA	335-67-1	ND	1.49	4.96	9.92		B9K0071	12-Nov-19	0.252 L	13-Nov-19 19:57	1
PFNA	375-95-1	ND	1.49	4.96	9.92		B9K0071	12-Nov-19	0.252 L	13-Nov-19 19:57	1
PFOS	1763-23-1	ND	1.49	6.94	9.92		B9K0071	12-Nov-19	0.252 L	13-Nov-19 19:57	1
PFDA	335-76-2	ND	1.49	4.96	9.92		B9K0071	12-Nov-19	0.252 L	13-Nov-19 19:57	1
MeFOSAA	2355-31-9	ND	1.49	4.96	9.92		B9K0071	12-Nov-19	0.252 L	13-Nov-19 19:57	1
EtFOSAA	2991-50-6	ND	1.49	4.96	9.92		B9K0071	12-Nov-19	0.252 L	13-Nov-19 19:57	1
PFUnA	2058-94-8	ND	1.49	4.96	9.92		B9K0071	12-Nov-19	0.252 L	13-Nov-19 19:57	1
PFDoA	307-55-1	ND	1.49	4.96	9.92		B9K0071	12-Nov-19	0.252 L	13-Nov-19 19:57	1
PFTrDA	72629-94-8	ND	1.49	4.96	9.92		B9K0071	12-Nov-19	0.252 L	13-Nov-19 19:57	1
PFTeDA	376-06-7	ND	1.49	4.96	9.92		B9K0071	12-Nov-19	0.252 L	13-Nov-19 19:57	1
HFPO-DA	13252-13-6	ND	1.49	4.96	9.92		B9K0071	12-Nov-19	0.252 L	13-Nov-19 19:57	1
ADONA	919005-14-4	ND	1.49	4.96	9.92		B9K0071	12-Nov-19	0.252 L	13-Nov-19 19:57	1
9CI-PF3ONS	756426-58-1	ND	1.49	4.96	9.92		B9K0071	12-Nov-19	0.252 L	13-Nov-19 19:57	1
11CI-PF3OUdS	763051-92-9	ND	1.49	4.96	9.92		B9K0071	12-Nov-19	0.252 L	13-Nov-19 19:57	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	106		70 - 130			B9K0071	12-Nov-19	0.252 L	13-Nov-19 19:57	1
13C2-PFDA	SURR	98.8		70 - 130			B9K0071	12-Nov-19	0.252 L	13-Nov-19 19:57	1
d5-EtFOSAA	SURR	99.6		70 - 130			B9K0071	12-Nov-19	0.252 L	13-Nov-19 19:57	1
13C3-HFPO-DA	SURR	107		70 - 130			B9K0071	12-Nov-19	0.252 L	13-Nov-19 19:57	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw11/15/20

Sample ID: WI-AF-1RW33-1119							EPA Method 537.1				
Client Data				Laboratory Data							
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903914-12	Column:	BEH C18				
Project:	9000NVT3	Date Collected:	04-Nov-19 14:05	Date Received:	07-Nov-19 09:54						
Location:	DW										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	70.6	1.50	5.00	9.99		B9K0071	12-Nov-19	0.250 L	07-Dec-19 00:10	1
PFHxA	307-24-4	70.5	1.50	5.00	9.99		B9K0071	12-Nov-19	0.250 L	07-Dec-19 00:10	1
PFHpA	375-85-9	1.88	1.50	5.00	9.99	J	B9K0071	12-Nov-19	0.250 L	07-Dec-19 00:10	1
PFHxS	355-46-4	5.92	1.50	5.00	9.99	J	B9K0071	12-Nov-19	0.250 L	07-Dec-19 00:10	1
PFOA	335-67-1	ND	1.50	5.00	9.99		B9K0071	12-Nov-19	0.250 L	07-Dec-19 00:10	1
PFNA	375-95-1	ND	1.50	5.00	9.99		B9K0071	12-Nov-19	0.250 L	07-Dec-19 00:10	1
PFOS	1763-23-1	ND	1.50	7.00	9.99		B9K0071	12-Nov-19	0.250 L	07-Dec-19 00:10	1
PFDA	335-76-2	ND	1.50	5.00	9.99		B9K0071	12-Nov-19	0.250 L	07-Dec-19 00:10	1
MeFOSAA	2355-31-9	ND	1.50	5.00	9.99		B9K0071	12-Nov-19	0.250 L	07-Dec-19 00:10	1
EtFOSAA	2991-50-6	ND	1.50	5.00	9.99		B9K0071	12-Nov-19	0.250 L	07-Dec-19 00:10	1
PFUnA	2058-94-8	ND	1.50	5.00	9.99		B9K0071	12-Nov-19	0.250 L	07-Dec-19 00:10	1
PFDoA	307-55-1	ND	1.50	5.00	9.99		B9K0071	12-Nov-19	0.250 L	07-Dec-19 00:10	1
PFTTrDA	72629-94-8	ND	1.50	5.00	9.99		B9K0071	12-Nov-19	0.250 L	07-Dec-19 00:10	1
PFTeDA	376-06-7	ND	1.50	5.00	9.99		B9K0071	12-Nov-19	0.250 L	07-Dec-19 00:10	1
HFPO-DA	13252-13-6	ND	1.50	5.00	9.99		B9K0071	12-Nov-19	0.250 L	07-Dec-19 00:10	1
ADONA	919005-14-4	ND	1.50	5.00	9.99		B9K0071	12-Nov-19	0.250 L	07-Dec-19 00:10	1
9CI-PF3ONS	756426-58-1	ND	1.50	5.00	9.99		B9K0071	12-Nov-19	0.250 L	07-Dec-19 00:10	1
11CI-PF3OUdS	763051-92-9	ND	1.50	5.00	9.99		B9K0071	12-Nov-19	0.250 L	07-Dec-19 00:10	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	104	70 - 130			B9K0071	12-Nov-19	0.250 L	07-Dec-19 00:10	1	
13C2-PFDA	SURR	101	70 - 130			B9K0071	12-Nov-19	0.250 L	07-Dec-19 00:10	1	
d5-EtFOSAA	SURR	96.0	70 - 130			B9K0071	12-Nov-19	0.250 L	07-Dec-19 00:10	1	
13C3-HFPO-DA	SURR	104	70 - 130			B9K0071	12-Nov-19	0.250 L	07-Dec-19 00:10	1	

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

mwil15/20

Sample ID: WI-AF-1FB33-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903914-13	Column:	BEH C18
Project:	9000NVT3	Date Collected:	04-Nov-19 14:05	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.49	4.96	9.94		B9K0071	12-Nov-19	0.252 L	13-Nov-19 20:18	1
PFHxA	307-24-4	ND	1.49	4.96	9.94		B9K0071	12-Nov-19	0.252 L	13-Nov-19 20:18	1
PFHpA	375-85-9	ND	1.49	4.96	9.94		B9K0071	12-Nov-19	0.252 L	13-Nov-19 20:18	1
PFHxS	355-46-4	ND	1.49	4.96	9.94		B9K0071	12-Nov-19	0.252 L	13-Nov-19 20:18	1
PFOA	335-67-1	ND	1.49	4.96	9.94		B9K0071	12-Nov-19	0.252 L	13-Nov-19 20:18	1
PFNA	375-95-1	ND	1.49	4.96	9.94		B9K0071	12-Nov-19	0.252 L	13-Nov-19 20:18	1
PFOS	1763-23-1	ND	1.49	6.94	9.94		B9K0071	12-Nov-19	0.252 L	13-Nov-19 20:18	1
PFDA	335-76-2	ND	1.49	4.96	9.94		B9K0071	12-Nov-19	0.252 L	13-Nov-19 20:18	1
MeFOSAA	2355-31-9	ND	1.49	4.96	9.94		B9K0071	12-Nov-19	0.252 L	13-Nov-19 20:18	1
EtFOSAA	2991-50-6	ND	1.49	4.96	9.94		B9K0071	12-Nov-19	0.252 L	13-Nov-19 20:18	1
PFUnA	2058-94-8	ND	1.49	4.96	9.94		B9K0071	12-Nov-19	0.252 L	13-Nov-19 20:18	1
PFDoA	307-55-1	ND	1.49	4.96	9.94		B9K0071	12-Nov-19	0.252 L	13-Nov-19 20:18	1
PFTTrDA	72629-94-8	ND	1.49	4.96	9.94		B9K0071	12-Nov-19	0.252 L	13-Nov-19 20:18	1
PFTeDA	376-06-7	ND	1.49	4.96	9.94		B9K0071	12-Nov-19	0.252 L	13-Nov-19 20:18	1
HFPO-DA	13252-13-6	ND	1.49	4.96	9.94		B9K0071	12-Nov-19	0.252 L	13-Nov-19 20:18	1
ADONA	919005-14-4	ND	1.49	4.96	9.94		B9K0071	12-Nov-19	0.252 L	13-Nov-19 20:18	1
9CI-PF3ONS	756426-58-1	ND	1.49	4.96	9.94		B9K0071	12-Nov-19	0.252 L	13-Nov-19 20:18	1
11CI-PF3OUdS	763051-92-9	ND	1.49	4.96	9.94		B9K0071	12-Nov-19	0.252 L	13-Nov-19 20:18	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	107		70 - 130			B9K0071	12-Nov-19	0.252 L	13-Nov-19 20:18	1
13C2-PFDA	SURR	99.0		70 - 130			B9K0071	12-Nov-19	0.252 L	13-Nov-19 20:18	1
d5-EtFOSAA	SURR	96.6		70 - 130			B9K0071	12-Nov-19	0.252 L	13-Nov-19 20:18	1
13C3-HFPO-DA	SURR	102		70 - 130			B9K0071	12-Nov-19	0.252 L	13-Nov-19 20:18	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

Results reported to the DL.

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

mwilist/20

Sample ID: WI-AF-1RW68-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903914-14	Column:	BEH C18
Project:	9000NVT3	Date Collected:	04-Nov-19 15:15	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.53	5.08	10.2		B9K0071	12-Nov-19	0.246 L	13-Nov-19 20:29	1
PFHxA	307-24-4	ND	1.53	5.08	10.2		B9K0071	12-Nov-19	0.246 L	13-Nov-19 20:29	1
PFHpA	375-85-9	ND	1.53	5.08	10.2		B9K0071	12-Nov-19	0.246 L	13-Nov-19 20:29	1
PFHxS	355-46-4	ND	1.53	5.08	10.2		B9K0071	12-Nov-19	0.246 L	13-Nov-19 20:29	1
PFOA	335-67-1	ND	1.53	5.08	10.2		B9K0071	12-Nov-19	0.246 L	13-Nov-19 20:29	1
PFNA	375-95-1	ND	1.53	5.08	10.2		B9K0071	12-Nov-19	0.246 L	13-Nov-19 20:29	1
PFOS	1763-23-1	ND	1.53	7.11	10.2		B9K0071	12-Nov-19	0.246 L	13-Nov-19 20:29	1
PFDA	335-76-2	ND	1.53	5.08	10.2		B9K0071	12-Nov-19	0.246 L	13-Nov-19 20:29	1
MeFOSAA	2355-31-9	ND	1.53	5.08	10.2		B9K0071	12-Nov-19	0.246 L	13-Nov-19 20:29	1
EtFOSAA	2991-50-6	ND	1.53	5.08	10.2		B9K0071	12-Nov-19	0.246 L	13-Nov-19 20:29	1
PFUnA	2058-94-8	ND	1.53	5.08	10.2		B9K0071	12-Nov-19	0.246 L	13-Nov-19 20:29	1
PFDoA	307-55-1	ND	1.53	5.08	10.2		B9K0071	12-Nov-19	0.246 L	13-Nov-19 20:29	1
PFTpDA	72629-94-8	ND	1.53	5.08	10.2		B9K0071	12-Nov-19	0.246 L	13-Nov-19 20:29	1
PFTeDA	376-06-7	ND	1.53	5.08	10.2		B9K0071	12-Nov-19	0.246 L	13-Nov-19 20:29	1
HFPO-DA	13252-13-6	ND	1.53	5.08	10.2		B9K0071	12-Nov-19	0.246 L	13-Nov-19 20:29	1
ADONA	919005-14-4	ND	1.53	5.08	10.2		B9K0071	12-Nov-19	0.246 L	13-Nov-19 20:29	1
9CI-PF3ONS	756426-58-1	ND	1.53	5.08	10.2		B9K0071	12-Nov-19	0.246 L	13-Nov-19 20:29	1
11CI-PF3OUdS	763051-92-9	ND	1.53	5.08	10.2		B9K0071	12-Nov-19	0.246 L	13-Nov-19 20:29	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	109	70 - 130		B9K0071	12-Nov-19	0.246 L	13-Nov-19 20:29	1
13C2-PFDA	SURR	96.2	70 - 130		B9K0071	12-Nov-19	0.246 L	13-Nov-19 20:29	1
d5-EtFOSAA	SURR	90.3	70 - 130		B9K0071	12-Nov-19	0.246 L	13-Nov-19 20:29	1
13C3-HFPO-DA	SURR	105	70 - 130		B9K0071	12-Nov-19	0.246 L	13-Nov-19 20:29	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

Results reported to the DL.

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

rw11/5/20

Sample ID: WI-CV-3FB17-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903914-15	Column:	BEH C18
Project:	9000NVT3	Date Collected:	01-Nov-19 10:20	Date Received:	07-Nov-19 09:54		

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 20:40	1
PFHxA	307-24-4	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 20:40	1
PFHpA	375-85-9	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 20:40	1
PFHxS	355-46-4	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 20:40	1
PFOA	335-67-1	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 20:40	1
PFNA	375-95-1	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 20:40	1
PFOS	1763-23-1	ND	1.51	7.06	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 20:40	1
PFDA	335-76-2	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 20:40	1
MeFOSAA	2355-31-9	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 20:40	1
EtFOSAA	2991-50-6	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 20:40	1
PFUnA	2058-94-8	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 20:40	1
PFDoA	307-55-1	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 20:40	1
PFTTrDA	72629-94-8	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 20:40	1
PFTeDA	376-06-7	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 20:40	1
HFPO-DA	13252-13-6	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 20:40	1
ADONA	919005-14-4	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 20:40	1
9CI-PF3ONS	756426-58-1	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 20:40	1
11CI-PF3OUdS	763051-92-9	ND	1.51	5.04	10.1		B9K0071	12-Nov-19	0.248 L	13-Nov-19 20:40	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	110	70 - 130			B9K0071	12-Nov-19	0.248 L	13-Nov-19 20:40	1	
13C2-PFDA	SURR	101	70 - 130			B9K0071	12-Nov-19	0.248 L	13-Nov-19 20:40	1	
d5-EtFOSAA	SURR	96.1	70 - 130			B9K0071	12-Nov-19	0.248 L	13-Nov-19 20:40	1	
13C3-HFPO-DA	SURR	107	70 - 130			B9K0071	12-Nov-19	0.248 L	13-Nov-19 20:40	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

rwil/5/20

**DATA VALIDATION SUMMARY REPORT
NAS WHIDBEY ISLAND, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon
 SDG: 1903916
 Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
 Site: NAS Whidbey Island, Residential Wells, CTO-4470, Washington
 Date: January 16, 2020

PFAS			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-AF-1FB68-1119	1903916-01	Water
2	WI-AF-1RW01-1119	1903916-02	Water
3	WI-AF-1RW01P-1119	1903916-03	Water
4	WI-AF-1FB01-1119	1903916-04	Water
5	WI-AF-1RW40-1119	1903916-05	Water
6	WI-AF-1FB40-1119	1903916-06	Water
7	WI-A06-RW08-1119	1903916-07	Water
8	WI-A06-FB08-1119	1903916-08	Water
9	WI-A06-RW04-1119	1903916-09	Water
10	WI-A06-FB04-1119	1903916-10	Water
11	WI-A06-RW03-1119	1903916-11	Water
12	WI-A06-RW03P-1119	1903916-12	Water
13	WI-A06-FB03-1119	1903916-13	Water
14	WI-A06-RW19-1119	1903916-14	Water
14MS	WI-A06-RW19-1119MS	1903916-14MS	Water
14MSD	WI-A06-RW19-1119MSD	1903916-14MSD	Water
15	WI-A06-FB19-1119	1903916-15	Water
16	WI-A06-RW14-1119	1903916-16	Water

A full data validation was performed on the analytical data for nine water samples and seven aqueous field blank samples collected on November 4-5, 2019 by CH2M Hill at the NAS Whidbey Island site in Washington. The samples were analyzed under the EPA Method “Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)”.

Specific method references are as follows:

Analysis
PFAS

Method References
USEPA Method 537.1

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, DoD Final General Data Validation Guidelines, November 2019, and the USEPA Data Review and Validation Guidelines as follows:

- The USEPA “Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537,” November 2018;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 10% of the detected results in the samples.

Data Usability Assessment

There were no rejections of data.

Overall the data are acceptable for the intended purposes. There were no qualifications.

Perfluorinated Alkyl Substances (PFAS)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC sample results are summarized in the table below.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WI-AF-1FB68-1119	None - ND	-	-	-
WI-AF-1FB01-1119	None - ND	-	-	-
WI-AF-1FB40-1119	None - ND	-	-	-
WI-A06-FB08-1119	None - ND	-	-	-
WI-A06-FB04-1119	None - ND	-	-	-
WI-A06-FB03-1119	None - ND	-	-	-
WI-A06-FB19-1119	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD samples exhibited acceptable percent recoveries (%R) and RPD values.

Laboratory Control Samples (LCS)

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- All criteria were met.

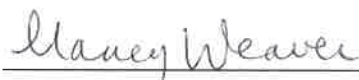
Field Duplicate Sample Precision

- Field duplicate results are summarized below. The precision was acceptable.

Compound	WI-AF-1RW01-1119 ng/L	WI-AF-1RW01P-1119 ng/L	RPD	Qualifier
None	ND	ND	-	-

Compound	WI-A06-RW03-1119 ng/L	WI-A06-RW03P-1119 ng/L	RPD	Qualifier
PFBS	43.0	40.3	6%	None
PFHxA	67.7	66.0	3%	
PFHpA	23.4	22.9	2%	
PFHxS	129	118	9%	
PFOA	36.5	35.5	3%	
PFOS	17.2	15.9	8%	

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed:  Dated: 1/19/20
Nancy Weaver
Senior Chemist

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

Sample ID: WI-AF-1FB68-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903916-01	Column:	BEH C18
Project:	9000NVT3	Date Collected:	04-Nov-19 15:15	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 20:31	1
PFHxA	307-24-4	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 20:31	1
PFHpA	375-85-9	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 20:31	1
PFHxS	355-46-4	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 20:31	1
PFOA	335-67-1	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 20:31	1
PFNA	375-95-1	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 20:31	1
PFOS	1763-23-1	ND	1.53	7.11	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 20:31	1
PFDA	335-76-2	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 20:31	1
MeFOSAA	2355-31-9	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 20:31	1
EtFOSAA	2991-50-6	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 20:31	1
PFUnA	2058-94-8	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 20:31	1
PFDoA	307-55-1	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 20:31	1
PFTTrDA	72629-94-8	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 20:31	1
PFTeDA	376-06-7	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 20:31	1
HFPO-DA	13252-13-6	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 20:31	1
ADONA	919005-14-4	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 20:31	1
9Cl-PF3ONS	756426-58-1	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 20:31	1
11Cl-PF3OUdS	763051-92-9	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 20:31	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	106		70 - 130			B9K0072	11-Nov-19	0.246 L	12-Nov-19 20:31	1
13C2-PFDA	SURR	103		70 - 130			B9K0072	11-Nov-19	0.246 L	12-Nov-19 20:31	1
d5-EtFOSAA	SURR	94.9		70 - 130			B9K0072	11-Nov-19	0.246 L	12-Nov-19 20:31	1
13C3-HFPO-DA	SURR	109		70 - 130			B9K0072	11-Nov-19	0.246 L	12-Nov-19 20:31	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

new 11/6/20

Sample ID: WI-AF-1RW01-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903916-02	Column:	BEH C18
Project:	9000NVT3	Date Collected:	04-Nov-19 13:10	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.46	4.88	9.76		B9K0072	11-Nov-19	0.256 L	12-Nov-19 20:42	1
PFHxA	307-24-4	ND	1.46	4.88	9.76		B9K0072	11-Nov-19	0.256 L	12-Nov-19 20:42	1
PFHpA	375-85-9	ND	1.46	4.88	9.76		B9K0072	11-Nov-19	0.256 L	12-Nov-19 20:42	1
PFHxS	355-46-4	ND	1.46	4.88	9.76		B9K0072	11-Nov-19	0.256 L	12-Nov-19 20:42	1
PFOA	335-67-1	ND	1.46	4.88	9.76		B9K0072	11-Nov-19	0.256 L	12-Nov-19 20:42	1
PFNA	375-95-1	ND	1.46	4.88	9.76		B9K0072	11-Nov-19	0.256 L	12-Nov-19 20:42	1
PFOS	1763-23-1	ND	1.46	6.84	9.76		B9K0072	11-Nov-19	0.256 L	12-Nov-19 20:42	1
PFDA	335-76-2	ND	1.46	4.88	9.76		B9K0072	11-Nov-19	0.256 L	12-Nov-19 20:42	1
MeFOSAA	2355-31-9	ND	1.46	4.88	9.76		B9K0072	11-Nov-19	0.256 L	12-Nov-19 20:42	1
EtFOSAA	2991-50-6	ND	1.46	4.88	9.76		B9K0072	11-Nov-19	0.256 L	12-Nov-19 20:42	1
PFUnA	2058-94-8	ND	1.46	4.88	9.76		B9K0072	11-Nov-19	0.256 L	12-Nov-19 20:42	1
PFDoA	307-55-1	ND	1.46	4.88	9.76		B9K0072	11-Nov-19	0.256 L	12-Nov-19 20:42	1
PFTTrDA	72629-94-8	ND	1.46	4.88	9.76		B9K0072	11-Nov-19	0.256 L	12-Nov-19 20:42	1
PFTeDA	376-06-7	ND	1.46	4.88	9.76		B9K0072	11-Nov-19	0.256 L	12-Nov-19 20:42	1
HFPO-DA	13252-13-6	ND	1.46	4.88	9.76		B9K0072	11-Nov-19	0.256 L	12-Nov-19 20:42	1
ADONA	919005-14-4	ND	1.46	4.88	9.76		B9K0072	11-Nov-19	0.256 L	12-Nov-19 20:42	1
9Cl-PF3ONS	756426-58-1	ND	1.46	4.88	9.76		B9K0072	11-Nov-19	0.256 L	12-Nov-19 20:42	1
11Cl-PF3OUdS	763051-92-9	ND	1.46	4.88	9.76		B9K0072	11-Nov-19	0.256 L	12-Nov-19 20:42	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	109	70 - 130			B9K0072	11-Nov-19	0.256 L	12-Nov-19 20:42	1	
13C2-PFDA	SURR	100	70 - 130			B9K0072	11-Nov-19	0.256 L	12-Nov-19 20:42	1	
d5-EtFOSAA	SURR	92.0	70 - 130			B9K0072	11-Nov-19	0.256 L	12-Nov-19 20:42	1	
13C3-HFPO-DA	SURR	105	70 - 130			B9K0072	11-Nov-19	0.256 L	12-Nov-19 20:42	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL

LOQ - Limit of quantitation

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

new 11/16/20

Sample ID: WI-AF-1RW01P-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903916-03	Column:	BEH C18
Project:	9000NVT3	Date Collected:	04-Nov-19 13:15	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.46	4.86	9.74		B9K0072	11-Nov-19	0.257 L	12-Nov-19 20:52	1
PFHxA	307-24-4	ND	1.46	4.86	9.74		B9K0072	11-Nov-19	0.257 L	12-Nov-19 20:52	1
PFHpA	375-85-9	ND	1.46	4.86	9.74		B9K0072	11-Nov-19	0.257 L	12-Nov-19 20:52	1
PFHxS	355-46-4	ND	1.46	4.86	9.74		B9K0072	11-Nov-19	0.257 L	12-Nov-19 20:52	1
PFOA	335-67-1	ND	1.46	4.86	9.74		B9K0072	11-Nov-19	0.257 L	12-Nov-19 20:52	1
PFNA	375-95-1	ND	1.46	4.86	9.74		B9K0072	11-Nov-19	0.257 L	12-Nov-19 20:52	1
PFOS	1763-23-1	ND	1.46	6.81	9.74		B9K0072	11-Nov-19	0.257 L	12-Nov-19 20:52	1
PFDA	335-76-2	ND	1.46	4.86	9.74		B9K0072	11-Nov-19	0.257 L	12-Nov-19 20:52	1
MeFOSAA	2355-31-9	ND	1.46	4.86	9.74		B9K0072	11-Nov-19	0.257 L	12-Nov-19 20:52	1
EtFOSAA	2991-50-6	ND	1.46	4.86	9.74		B9K0072	11-Nov-19	0.257 L	12-Nov-19 20:52	1
PFUnA	2058-94-8	ND	1.46	4.86	9.74		B9K0072	11-Nov-19	0.257 L	12-Nov-19 20:52	1
PFDoA	307-55-1	ND	1.46	4.86	9.74		B9K0072	11-Nov-19	0.257 L	12-Nov-19 20:52	1
PFTTrDA	72629-94-8	ND	1.46	4.86	9.74		B9K0072	11-Nov-19	0.257 L	12-Nov-19 20:52	1
PFTeDA	376-06-7	ND	1.46	4.86	9.74		B9K0072	11-Nov-19	0.257 L	12-Nov-19 20:52	1
HFPO-DA	13252-13-6	ND	1.46	4.86	9.74		B9K0072	11-Nov-19	0.257 L	12-Nov-19 20:52	1
ADONA	919005-14-4	ND	1.46	4.86	9.74		B9K0072	11-Nov-19	0.257 L	12-Nov-19 20:52	1
9CI-PF3ONS	756426-58-1	ND	1.46	4.86	9.74		B9K0072	11-Nov-19	0.257 L	12-Nov-19 20:52	1
11CI-PF3OUdS	763051-92-9	ND	1.46	4.86	9.74		B9K0072	11-Nov-19	0.257 L	12-Nov-19 20:52	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	112		70 - 130			B9K0072	11-Nov-19	0.257 L	12-Nov-19 20:52	1
13C2-PFDA	SURR	105		70 - 130			B9K0072	11-Nov-19	0.257 L	12-Nov-19 20:52	1
d5-EtFOSAA	SURR	96.9		70 - 130			B9K0072	11-Nov-19	0.257 L	12-Nov-19 20:52	1
13C3-HFPO-DA	SURR	105		70 - 130			B9K0072	11-Nov-19	0.257 L	12-Nov-19 20:52	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

new 11/16/20

Sample ID: WI-AF-1FB01-1119 **EPA Method 537.1**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903916-04	Column:	BEH C18
Project:	9000NVT3	Date Collected:	04-Nov-19 13:10	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.49	4.96	9.94		B9K0072	11-Nov-19	0.252 L	12-Nov-19 21:03	1
PFHxA	307-24-4	ND	1.49	4.96	9.94		B9K0072	11-Nov-19	0.252 L	12-Nov-19 21:03	1
PFHpA	375-85-9	ND	1.49	4.96	9.94		B9K0072	11-Nov-19	0.252 L	12-Nov-19 21:03	1
PFHxS	355-46-4	ND	1.49	4.96	9.94		B9K0072	11-Nov-19	0.252 L	12-Nov-19 21:03	1
PFOA	335-67-1	ND	1.49	4.96	9.94		B9K0072	11-Nov-19	0.252 L	12-Nov-19 21:03	1
PFNA	375-95-1	ND	1.49	4.96	9.94		B9K0072	11-Nov-19	0.252 L	12-Nov-19 21:03	1
PFOS	1763-23-1	ND	1.49	6.94	9.94		B9K0072	11-Nov-19	0.252 L	12-Nov-19 21:03	1
PFDA	335-76-2	ND	1.49	4.96	9.94		B9K0072	11-Nov-19	0.252 L	12-Nov-19 21:03	1
MeFOSAA	2355-31-9	ND	1.49	4.96	9.94		B9K0072	11-Nov-19	0.252 L	12-Nov-19 21:03	1
EtFOSAA	2991-50-6	ND	1.49	4.96	9.94		B9K0072	11-Nov-19	0.252 L	12-Nov-19 21:03	1
PFUnA	2058-94-8	ND	1.49	4.96	9.94		B9K0072	11-Nov-19	0.252 L	12-Nov-19 21:03	1
PFDoA	307-55-1	ND	1.49	4.96	9.94		B9K0072	11-Nov-19	0.252 L	12-Nov-19 21:03	1
PFTTrDA	72629-94-8	ND	1.49	4.96	9.94		B9K0072	11-Nov-19	0.252 L	12-Nov-19 21:03	1
PFTeDA	376-06-7	ND	1.49	4.96	9.94		B9K0072	11-Nov-19	0.252 L	12-Nov-19 21:03	1
HFPO-DA	13252-13-6	ND	1.49	4.96	9.94		B9K0072	11-Nov-19	0.252 L	12-Nov-19 21:03	1
ADONA	919005-14-4	ND	1.49	4.96	9.94		B9K0072	11-Nov-19	0.252 L	12-Nov-19 21:03	1
9CI-PF3ONS	756426-58-1	ND	1.49	4.96	9.94		B9K0072	11-Nov-19	0.252 L	12-Nov-19 21:03	1
11CI-PF3OUdS	763051-92-9	ND	1.49	4.96	9.94		B9K0072	11-Nov-19	0.252 L	12-Nov-19 21:03	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	108	70 - 130		B9K0072	11-Nov-19	0.252 L	12-Nov-19 21:03	1
13C2-PFDA	SURR	102	70 - 130		B9K0072	11-Nov-19	0.252 L	12-Nov-19 21:03	1
d5-EtFOSAA	SURR	98.6	70 - 130		B9K0072	11-Nov-19	0.252 L	12-Nov-19 21:03	1
13C3-HFPO-DA	SURR	105	70 - 130		B9K0072	11-Nov-19	0.252 L	12-Nov-19 21:03	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

New 11/16/20

Sample ID: WI-AF-1RW40-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903916-05	Column:	BEH C18
Project:	9000NVT3	Date Collected:	04-Nov-19 11:10	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	4.24	1.47	4.90	9.82	J	B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:13	1
PFHxA	307-24-4	4.03	1.47	4.90	9.82	J	B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:13	1
PFHpA	375-85-9	1.94	1.47	4.90	9.82	J	B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:13	1
PFHxS	355-46-4	8.95	1.47	4.90	9.82	J	B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:13	1
PFOA	335-67-1	13.9	1.47	4.90	9.82		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:13	1
PFNA	375-95-1	ND	1.47	4.90	9.82		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:13	1
PFOS	1763-23-1	2.97	1.47	6.86	9.82	J	B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:13	1
PFDA	335-76-2	ND	1.47	4.90	9.82		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:13	1
MeFOSAA	2355-31-9	ND	1.47	4.90	9.82		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:13	1
EtFOSAA	2991-50-6	ND	1.47	4.90	9.82		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:13	1
PFUnA	2058-94-8	ND	1.47	4.90	9.82		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:13	1
PFDoA	307-55-1	ND	1.47	4.90	9.82		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:13	1
PFTTrDA	72629-94-8	ND	1.47	4.90	9.82		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:13	1
PFTeDA	376-06-7	ND	1.47	4.90	9.82		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:13	1
HFPO-DA	13252-13-6	ND	1.47	4.90	9.82		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:13	1
ADONA	919005-14-4	ND	1.47	4.90	9.82		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:13	1
9Cl-PF3ONS	756426-58-1	ND	1.47	4.90	9.82		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:13	1
11Cl-PF3OUdS	763051-92-9	ND	1.47	4.90	9.82		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:13	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	108	70 - 130		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:13	1
13C2-PFDA	SURR	97.1	70 - 130		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:13	1
d5-EtFOSAA	SURR	93.7	70 - 130		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:13	1
13C3-HFPO-DA	SURR	106	70 - 130		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:13	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

nw 11/16/20

Sample ID: WI-AF-1FB40-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903916-06	Column:	BEH C18
Project:	9000NVT3	Date Collected:	04-Nov-19 11:10	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.47	4.90	9.79		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:24	1
PFHxA	307-24-4	ND	1.47	4.90	9.79		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:24	1
PFHpA	375-85-9	ND	1.47	4.90	9.79		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:24	1
PFHxS	355-46-4	ND	1.47	4.90	9.79		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:24	1
PFOA	335-67-1	ND	1.47	4.90	9.79		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:24	1
PFNA	375-95-1	ND	1.47	4.90	9.79		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:24	1
PFOS	1763-23-1	ND	1.47	6.86	9.79		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:24	1
PFDA	335-76-2	ND	1.47	4.90	9.79		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:24	1
MeFOSAA	2355-31-9	ND	1.47	4.90	9.79		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:24	1
EtFOSAA	2991-50-6	ND	1.47	4.90	9.79		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:24	1
PFUnA	2058-94-8	ND	1.47	4.90	9.79		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:24	1
PFDoA	307-55-1	ND	1.47	4.90	9.79		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:24	1
PFTTrDA	72629-94-8	ND	1.47	4.90	9.79		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:24	1
PFTeDA	376-06-7	ND	1.47	4.90	9.79		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:24	1
HFPO-DA	13252-13-6	ND	1.47	4.90	9.79		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:24	1
ADONA	919005-14-4	ND	1.47	4.90	9.79		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:24	1
9CI-PF3ONS	756426-58-1	ND	1.47	4.90	9.79		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:24	1
11CI-PF3OUdS	763051-92-9	ND	1.47	4.90	9.79		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:24	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	108	70 - 130		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:24	1
13C2-PFDA	SURR	101	70 - 130		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:24	1
d5-EtFOSAA	SURR	101	70 - 130		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:24	1
13C3-HFPO-DA	SURR	106	70 - 130		B9K0072	11-Nov-19	0.255 L	12-Nov-19 21:24	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

Results reported to the DL.

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

new client

Sample ID: WI-A06-RW08-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903916-07	Column:	BEH C18
Project:	9000NVT3	Date Collected:	05-Nov-19 08:55	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	22.0	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:35	1
PFHxA	307-24-4	18.4	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:35	1
PFHpA	375-85-9	8.73	1.48	4.94	9.87	J	B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:35	1
PFHxS	355-46-4	109	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:35	1
PFOA	335-67-1	28.6	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:35	1
PFNA	375-95-1	3.42	1.48	4.94	9.87	J	B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:35	1
PFOS	1763-23-1	82.1	1.48	6.92	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:35	1
PFDA	335-76-2	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:35	1
MeFOSAA	2355-31-9	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:35	1
EtFOSAA	2991-50-6	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:35	1
PFUnA	2058-94-8	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:35	1
PFDoA	307-55-1	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:35	1
PFTTrDA	72629-94-8	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:35	1
PFTeDA	376-06-7	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:35	1
HFPO-DA	13252-13-6	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:35	1
ADONA	919005-14-4	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:35	1
9CI-PF3ONS	756426-58-1	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:35	1
11CI-PF3OUdS	763051-92-9	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:35	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	110		70 - 130			B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:35	1
13C2-PFDA	SURR	107		70 - 130			B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:35	1
d5-EtFOSAA	SURR	102		70 - 130			B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:35	1
13C3-HFPO-DA	SURR	113		70 - 130			B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:35	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 111120

Sample ID: WI-A06-FB08-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903916-08	Column:	BEH C18
Project:	9000NVT3	Date Collected:	05-Nov-19 08:55	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.48	4.94	9.86		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:45	1
PFHxA	307-24-4	ND	1.48	4.94	9.86		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:45	1
PFHpA	375-85-9	ND	1.48	4.94	9.86		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:45	1
PFHxS	355-46-4	ND	1.48	4.94	9.86		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:45	1
PFOA	335-67-1	ND	1.48	4.94	9.86		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:45	1
PFNA	375-95-1	ND	1.48	4.94	9.86		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:45	1
PFOS	1763-23-1	ND	1.48	6.92	9.86		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:45	1
PFDA	335-76-2	ND	1.48	4.94	9.86		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:45	1
MeFOSAA	2355-31-9	ND	1.48	4.94	9.86		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:45	1
EtFOSAA	2991-50-6	ND	1.48	4.94	9.86		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:45	1
PFUnA	2058-94-8	ND	1.48	4.94	9.86		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:45	1
PFDoA	307-55-1	ND	1.48	4.94	9.86		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:45	1
PFTTrDA	72629-94-8	ND	1.48	4.94	9.86		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:45	1
PFTeDA	376-06-7	ND	1.48	4.94	9.86		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:45	1
HFPO-DA	13252-13-6	ND	1.48	4.94	9.86		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:45	1
ADONA	919005-14-4	ND	1.48	4.94	9.86		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:45	1
9CI-PF3ONS	756426-58-1	ND	1.48	4.94	9.86		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:45	1
11CI-PF3OUdS	763051-92-9	ND	1.48	4.94	9.86		B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:45	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	110	70 - 130			B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:45	1	
13C2-PFDA	SURR	104	70 - 130			B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:45	1	
d5-EtFOSAA	SURR	94.9	70 - 130			B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:45	1	
13C3-HFPO-DA	SURR	109	70 - 130			B9K0072	11-Nov-19	0.253 L	12-Nov-19 21:45	1	

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

new file 120

Sample ID: WI-A06-RW04-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903916-09	Column:	BEH C18
Project:	9000NVT3	Date Collected:	04-Nov-19 16:20	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	33.1	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 21:56	1
PFHxA	307-24-4	3.56	1.53	5.08	10.2	J	B9K0072	11-Nov-19	0.246 L	12-Nov-19 21:56	1
PFHpA	375-85-9	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 21:56	1
PFHxS	355-46-4	51.7	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 21:56	1
PFOA	335-67-1	3.86	1.53	5.08	10.2	J	B9K0072	11-Nov-19	0.246 L	12-Nov-19 21:56	1
PFNA	375-95-1	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 21:56	1
PFOS	1763-23-1	2.21	1.53	7.11	10.2	J	B9K0072	11-Nov-19	0.246 L	12-Nov-19 21:56	1
PFDA	335-76-2	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 21:56	1
MeFOSAA	2355-31-9	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 21:56	1
EtFOSAA	2991-50-6	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 21:56	1
PFUnA	2058-94-8	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 21:56	1
PFDoA	307-55-1	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 21:56	1
PFTTrDA	72629-94-8	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 21:56	1
PFTeDA	376-06-7	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 21:56	1
HFPO-DA	13252-13-6	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 21:56	1
ADONA	919005-14-4	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 21:56	1
9CI-PF3ONS	756426-58-1	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 21:56	1
11CI-PF3OUdS	763051-92-9	ND	1.53	5.08	10.2		B9K0072	11-Nov-19	0.246 L	12-Nov-19 21:56	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130		B9K0072	11-Nov-19	0.246 L	12-Nov-19 21:56	1
13C2-PFDA	SURR	99.8	70 - 130		B9K0072	11-Nov-19	0.246 L	12-Nov-19 21:56	1
d5-EtFOSAA	SURR	82.9	70 - 130		B9K0072	11-Nov-19	0.246 L	12-Nov-19 21:56	1
13C3-HFPO-DA	SURR	98.3	70 - 130		B9K0072	11-Nov-19	0.246 L	12-Nov-19 21:56	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL

LOQ - Limit of quantitation

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

NEW 11/16/20

Sample ID: WI-A06-FB04-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903916-10	Column:	BEH C18
Project:	9000NVT3	Date Collected:	04-Nov-19 16:20	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.45	4.83	9.65		B9K0072	11-Nov-19	0.259 L	12-Nov-19 22:39	1
PFHxA	307-24-4	ND	1.45	4.83	9.65		B9K0072	11-Nov-19	0.259 L	12-Nov-19 22:39	1
PFHpA	375-85-9	ND	1.45	4.83	9.65		B9K0072	11-Nov-19	0.259 L	12-Nov-19 22:39	1
PFHxS	355-46-4	ND	1.45	4.83	9.65		B9K0072	11-Nov-19	0.259 L	12-Nov-19 22:39	1
PFOA	335-67-1	ND	1.45	4.83	9.65		B9K0072	11-Nov-19	0.259 L	12-Nov-19 22:39	1
PFNA	375-95-1	ND	1.45	4.83	9.65		B9K0072	11-Nov-19	0.259 L	12-Nov-19 22:39	1
PFOS	1763-23-1	ND	1.45	6.76	9.65		B9K0072	11-Nov-19	0.259 L	12-Nov-19 22:39	1
PFDA	335-76-2	ND	1.45	4.83	9.65		B9K0072	11-Nov-19	0.259 L	12-Nov-19 22:39	1
MeFOSAA	2355-31-9	ND	1.45	4.83	9.65		B9K0072	11-Nov-19	0.259 L	12-Nov-19 22:39	1
EtFOSAA	2991-50-6	ND	1.45	4.83	9.65		B9K0072	11-Nov-19	0.259 L	12-Nov-19 22:39	1
PFUnA	2058-94-8	ND	1.45	4.83	9.65		B9K0072	11-Nov-19	0.259 L	12-Nov-19 22:39	1
PFDoA	307-55-1	ND	1.45	4.83	9.65		B9K0072	11-Nov-19	0.259 L	12-Nov-19 22:39	1
PFTTrDA	72629-94-8	ND	1.45	4.83	9.65		B9K0072	11-Nov-19	0.259 L	12-Nov-19 22:39	1
PFTeDA	376-06-7	ND	1.45	4.83	9.65		B9K0072	11-Nov-19	0.259 L	12-Nov-19 22:39	1
HFPO-DA	13252-13-6	ND	1.45	4.83	9.65		B9K0072	11-Nov-19	0.259 L	12-Nov-19 22:39	1
ADONA	919005-14-4	ND	1.45	4.83	9.65		B9K0072	11-Nov-19	0.259 L	12-Nov-19 22:39	1
9CI-PF3ONS	756426-58-1	ND	1.45	4.83	9.65		B9K0072	11-Nov-19	0.259 L	12-Nov-19 22:39	1
11CI-PF3OUdS	763051-92-9	ND	1.45	4.83	9.65		B9K0072	11-Nov-19	0.259 L	12-Nov-19 22:39	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	107	70 - 130		B9K0072	11-Nov-19	0.259 L	12-Nov-19 22:39	1
13C2-PFDA	SURR	100	70 - 130		B9K0072	11-Nov-19	0.259 L	12-Nov-19 22:39	1
d5-EtFOSAA	SURR	99.4	70 - 130		B9K0072	11-Nov-19	0.259 L	12-Nov-19 22:39	1
13C3-HFPO-DA	SURR	103	70 - 130		B9K0072	11-Nov-19	0.259 L	12-Nov-19 22:39	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

Results reported to the DL.

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

Nov 16/20

Sample ID: WI-A06-RW03-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903916-11	Column:	BEH C18
Project:	9000NVT3	Date Collected:	04-Nov-19 16:10	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	43.0	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 22:49	1
PFHxA	307-24-4	67.7	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 22:49	1
PFHpA	375-85-9	23.4	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 22:49	1
PFHxS	355-46-4	129	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 22:49	1
PFOA	335-67-1	36.5	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 22:49	1
PFNA	375-95-1	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 22:49	1
PFOS	1763-23-1	17.2	1.48	6.92	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 22:49	1
PFDA	335-76-2	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 22:49	1
MeFOSAA	2355-31-9	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 22:49	1
EtFOSAA	2991-50-6	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 22:49	1
PFUnA	2058-94-8	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 22:49	1
PFDoA	307-55-1	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 22:49	1
PFTTrDA	72629-94-8	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 22:49	1
PFTeDA	376-06-7	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 22:49	1
HFPO-DA	13252-13-6	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 22:49	1
ADONA	919005-14-4	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 22:49	1
9CI-PF3ONS	756426-58-1	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 22:49	1
11CI-PF3OUdS	763051-92-9	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 22:49	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	113	70 - 130		B9K0072	11-Nov-19	0.253 L	12-Nov-19 22:49	1
13C2-PFDA	SURR	104	70 - 130		B9K0072	11-Nov-19	0.253 L	12-Nov-19 22:49	1
d5-EtFOSAA	SURR	103	70 - 130		B9K0072	11-Nov-19	0.253 L	12-Nov-19 22:49	1
13C3-HFPO-DA	SURR	109	70 - 130		B9K0072	11-Nov-19	0.253 L	12-Nov-19 22:49	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

new 11/16/20

Sample ID: WI-A06-RW03P-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903916-12	Column:	BEH C18
Project:	9000NVT3	Date Collected:	04-Nov-19 16:15	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	40.3	1.50	5.00	9.99		B9K0072	11-Nov-19	0.250 L	12-Nov-19 23:00	1
PFHxA	307-24-4	66.0	1.50	5.00	9.99		B9K0072	11-Nov-19	0.250 L	12-Nov-19 23:00	1
PFHpA	375-85-9	22.9	1.50	5.00	9.99		B9K0072	11-Nov-19	0.250 L	12-Nov-19 23:00	1
PFHxS	355-46-4	118	1.50	5.00	9.99		B9K0072	11-Nov-19	0.250 L	12-Nov-19 23:00	1
PFOA	335-67-1	35.5	1.50	5.00	9.99		B9K0072	11-Nov-19	0.250 L	12-Nov-19 23:00	1
PFNA	375-95-1	ND	1.50	5.00	9.99		B9K0072	11-Nov-19	0.250 L	12-Nov-19 23:00	1
PFOS	1763-23-1	15.9	1.50	7.00	9.99		B9K0072	11-Nov-19	0.250 L	12-Nov-19 23:00	1
PFDA	335-76-2	ND	1.50	5.00	9.99		B9K0072	11-Nov-19	0.250 L	12-Nov-19 23:00	1
MeFOSAA	2355-31-9	ND	1.50	5.00	9.99		B9K0072	11-Nov-19	0.250 L	12-Nov-19 23:00	1
EtFOSAA	2991-50-6	ND	1.50	5.00	9.99		B9K0072	11-Nov-19	0.250 L	12-Nov-19 23:00	1
PFUnA	2058-94-8	ND	1.50	5.00	9.99		B9K0072	11-Nov-19	0.250 L	12-Nov-19 23:00	1
PFDoA	307-55-1	ND	1.50	5.00	9.99		B9K0072	11-Nov-19	0.250 L	12-Nov-19 23:00	1
PFTTrDA	72629-94-8	ND	1.50	5.00	9.99		B9K0072	11-Nov-19	0.250 L	12-Nov-19 23:00	1
PFTeDA	376-06-7	ND	1.50	5.00	9.99		B9K0072	11-Nov-19	0.250 L	12-Nov-19 23:00	1
HFPO-DA	13252-13-6	ND	1.50	5.00	9.99		B9K0072	11-Nov-19	0.250 L	12-Nov-19 23:00	1
ADONA	919005-14-4	ND	1.50	5.00	9.99		B9K0072	11-Nov-19	0.250 L	12-Nov-19 23:00	1
9CI-PF3ONS	756426-58-1	ND	1.50	5.00	9.99		B9K0072	11-Nov-19	0.250 L	12-Nov-19 23:00	1
11CI-PF3OUdS	763051-92-9	ND	1.50	5.00	9.99		B9K0072	11-Nov-19	0.250 L	12-Nov-19 23:00	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	111	70 - 130		B9K0072	11-Nov-19	0.250 L	12-Nov-19 23:00	1
13C2-PFDA	SURR	96.2	70 - 130		B9K0072	11-Nov-19	0.250 L	12-Nov-19 23:00	1
d5-EtFOSAA	SURR	96.1	70 - 130		B9K0072	11-Nov-19	0.250 L	12-Nov-19 23:00	1
13C3-HFPO-DA	SURR	109	70 - 130		B9K0072	11-Nov-19	0.250 L	12-Nov-19 23:00	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL

LOQ - Limit of quantitation

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

new 11/12/20

Sample ID: WI-A06-FB03-1119 **EPA Method 537.1**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903916-13	Column:	BEH C18
Project:	9000NVT3	Date Collected:	04-Nov-19 16:10	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.47	4.90	9.80		B9K0072	11-Nov-19	0.255 L	12-Nov-19 23:11	1
PFHxA	307-24-4	ND	1.47	4.90	9.80		B9K0072	11-Nov-19	0.255 L	12-Nov-19 23:11	1
PFHpA	375-85-9	ND	1.47	4.90	9.80		B9K0072	11-Nov-19	0.255 L	12-Nov-19 23:11	1
PFHxS	355-46-4	ND	1.47	4.90	9.80		B9K0072	11-Nov-19	0.255 L	12-Nov-19 23:11	1
PFOA	335-67-1	ND	1.47	4.90	9.80		B9K0072	11-Nov-19	0.255 L	12-Nov-19 23:11	1
PFNA	375-95-1	ND	1.47	4.90	9.80		B9K0072	11-Nov-19	0.255 L	12-Nov-19 23:11	1
PFOS	1763-23-1	ND	1.47	6.86	9.80		B9K0072	11-Nov-19	0.255 L	12-Nov-19 23:11	1
PFDA	335-76-2	ND	1.47	4.90	9.80		B9K0072	11-Nov-19	0.255 L	12-Nov-19 23:11	1
MeFOSAA	2355-31-9	ND	1.47	4.90	9.80		B9K0072	11-Nov-19	0.255 L	12-Nov-19 23:11	1
EtFOSAA	2991-50-6	ND	1.47	4.90	9.80		B9K0072	11-Nov-19	0.255 L	12-Nov-19 23:11	1
PFUnA	2058-94-8	ND	1.47	4.90	9.80		B9K0072	11-Nov-19	0.255 L	12-Nov-19 23:11	1
PFDoA	307-55-1	ND	1.47	4.90	9.80		B9K0072	11-Nov-19	0.255 L	12-Nov-19 23:11	1
PFTTrDA	72629-94-8	ND	1.47	4.90	9.80		B9K0072	11-Nov-19	0.255 L	12-Nov-19 23:11	1
PFTeDA	376-06-7	ND	1.47	4.90	9.80		B9K0072	11-Nov-19	0.255 L	12-Nov-19 23:11	1
HFPO-DA	13252-13-6	ND	1.47	4.90	9.80		B9K0072	11-Nov-19	0.255 L	12-Nov-19 23:11	1
ADONA	919005-14-4	ND	1.47	4.90	9.80		B9K0072	11-Nov-19	0.255 L	12-Nov-19 23:11	1
9CI-PF3ONS	756426-58-1	ND	1.47	4.90	9.80		B9K0072	11-Nov-19	0.255 L	12-Nov-19 23:11	1
11CI-PF3OUdS	763051-92-9	ND	1.47	4.90	9.80		B9K0072	11-Nov-19	0.255 L	12-Nov-19 23:11	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	108	70 - 130		B9K0072	11-Nov-19	0.255 L	12-Nov-19 23:11	1
13C2-PFDA	SURR	104	70 - 130		B9K0072	11-Nov-19	0.255 L	12-Nov-19 23:11	1
d5-EtFOSAA	SURR	95.5	70 - 130		B9K0072	11-Nov-19	0.255 L	12-Nov-19 23:11	1
13C3-HFPO-DA	SURR	109	70 - 130		B9K0072	11-Nov-19	0.255 L	12-Nov-19 23:11	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

new 11/12/20

Sample ID: WI-A06-RW19-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903916-14	Column:	BEH C18
Project:	9000NVT3	Date Collected:	05-Nov-19 08:05	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	52.8	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 23:21	1
PFHxA	307-24-4	56.0	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 23:21	1
PFHpA	375-85-9	28.8	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 23:21	1
PFHxS	355-46-4	236	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 23:21	1
PFOA	335-67-1	41.4	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 23:21	1
PFNA	375-95-1	3.71	1.48	4.94	9.87	J	B9K0072	11-Nov-19	0.253 L	12-Nov-19 23:21	1
PFOS	1763-23-1	91.3	1.48	6.92	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 23:21	1
PFDA	335-76-2	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 23:21	1
MeFOSAA	2355-31-9	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 23:21	1
EtFOSAA	2991-50-6	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 23:21	1
PFUnA	2058-94-8	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 23:21	1
PFDoA	307-55-1	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 23:21	1
PFTTrDA	72629-94-8	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 23:21	1
PFTeDA	376-06-7	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 23:21	1
HFPO-DA	13252-13-6	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 23:21	1
ADONA	919005-14-4	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 23:21	1
9CI-PF3ONS	756426-58-1	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 23:21	1
11CI-PF3OUdS	763051-92-9	ND	1.48	4.94	9.87		B9K0072	11-Nov-19	0.253 L	12-Nov-19 23:21	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	109	70 - 130			B9K0072	11-Nov-19	0.253 L	12-Nov-19 23:21	1	
13C2-PFDA	SURR	93.6	70 - 130			B9K0072	11-Nov-19	0.253 L	12-Nov-19 23:21	1	
d5-EtFOSAA	SURR	103	70 - 130			B9K0072	11-Nov-19	0.253 L	12-Nov-19 23:21	1	
13C3-HFPO-DA	SURR	104	70 - 130			B9K0072	11-Nov-19	0.253 L	12-Nov-19 23:21	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NEW 11/6/20

Sample ID: WI-A06-FB19-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903916-15	Column:	BEH C18
Project:	9000NVT3	Date Collected:	05-Nov-19 08:05	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.49	4.96	9.91		B9K0072	11-Nov-19	0.252 L	12-Nov-19 23:32	1
PFHxA	307-24-4	ND	1.49	4.96	9.91		B9K0072	11-Nov-19	0.252 L	12-Nov-19 23:32	1
PFHpA	375-85-9	ND	1.49	4.96	9.91		B9K0072	11-Nov-19	0.252 L	12-Nov-19 23:32	1
PFHxS	355-46-4	ND	1.49	4.96	9.91		B9K0072	11-Nov-19	0.252 L	12-Nov-19 23:32	1
PFOA	335-67-1	ND	1.49	4.96	9.91		B9K0072	11-Nov-19	0.252 L	12-Nov-19 23:32	1
PFNA	375-95-1	ND	1.49	4.96	9.91		B9K0072	11-Nov-19	0.252 L	12-Nov-19 23:32	1
PFOS	1763-23-1	ND	1.49	6.94	9.91		B9K0072	11-Nov-19	0.252 L	12-Nov-19 23:32	1
PFDA	335-76-2	ND	1.49	4.96	9.91		B9K0072	11-Nov-19	0.252 L	12-Nov-19 23:32	1
MeFOSAA	2355-31-9	ND	1.49	4.96	9.91		B9K0072	11-Nov-19	0.252 L	12-Nov-19 23:32	1
EtFOSAA	2991-50-6	ND	1.49	4.96	9.91		B9K0072	11-Nov-19	0.252 L	12-Nov-19 23:32	1
PFUnA	2058-94-8	ND	1.49	4.96	9.91		B9K0072	11-Nov-19	0.252 L	12-Nov-19 23:32	1
PFDoA	307-55-1	ND	1.49	4.96	9.91		B9K0072	11-Nov-19	0.252 L	12-Nov-19 23:32	1
PFTTrDA	72629-94-8	ND	1.49	4.96	9.91		B9K0072	11-Nov-19	0.252 L	12-Nov-19 23:32	1
PFTeDA	376-06-7	ND	1.49	4.96	9.91		B9K0072	11-Nov-19	0.252 L	12-Nov-19 23:32	1
HFPO-DA	13252-13-6	ND	1.49	4.96	9.91		B9K0072	11-Nov-19	0.252 L	12-Nov-19 23:32	1
ADONA	919005-14-4	ND	1.49	4.96	9.91		B9K0072	11-Nov-19	0.252 L	12-Nov-19 23:32	1
9CI-PF3ONS	756426-58-1	ND	1.49	4.96	9.91		B9K0072	11-Nov-19	0.252 L	12-Nov-19 23:32	1
11CI-PF3OUdS	763051-92-9	ND	1.49	4.96	9.91		B9K0072	11-Nov-19	0.252 L	12-Nov-19 23:32	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	113	70 - 130			B9K0072	11-Nov-19	0.252 L	12-Nov-19 23:32	1	
13C2-PFDA	SURR	103	70 - 130			B9K0072	11-Nov-19	0.252 L	12-Nov-19 23:32	1	
d5-EtFOSAA	SURR	112	70 - 130			B9K0072	11-Nov-19	0.252 L	12-Nov-19 23:32	1	
13C3-HFPO-DA	SURR	112	70 - 130			B9K0072	11-Nov-19	0.252 L	12-Nov-19 23:32	1	

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

Results reported to the DL

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

new 11/12/20

Sample ID: WI-A06-RW14-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903916-16	Column:	BEH C18
Project:	9000NVT3	Date Collected:	05-Nov-19 10:25	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	53.9	1.55	5.19	10.4		B9K0072	11-Nov-19	0.241 L	12-Nov-19 23:42	1
PFHxA	307-24-4	73.0	1.55	5.19	10.4		B9K0072	11-Nov-19	0.241 L	12-Nov-19 23:42	1
PFHpA	375-85-9	18.7	1.55	5.19	10.4		B9K0072	11-Nov-19	0.241 L	12-Nov-19 23:42	1
PFHxS	355-46-4	232	1.55	5.19	10.4		B9K0072	11-Nov-19	0.241 L	12-Nov-19 23:42	1
PFOA	335-67-1	24.8	1.55	5.19	10.4		B9K0072	11-Nov-19	0.241 L	12-Nov-19 23:42	1
PFNA	375-95-1	ND	1.55	5.19	10.4		B9K0072	11-Nov-19	0.241 L	12-Nov-19 23:42	1
PFOS	1763-23-1	8.77	1.55	7.26	10.4	J	B9K0072	11-Nov-19	0.241 L	12-Nov-19 23:42	1
PFDA	335-76-2	ND	1.55	5.19	10.4		B9K0072	11-Nov-19	0.241 L	12-Nov-19 23:42	1
MeFOSAA	2355-31-9	ND	1.55	5.19	10.4		B9K0072	11-Nov-19	0.241 L	12-Nov-19 23:42	1
EtFOSAA	2991-50-6	ND	1.55	5.19	10.4		B9K0072	11-Nov-19	0.241 L	12-Nov-19 23:42	1
PFUnA	2058-94-8	ND	1.55	5.19	10.4		B9K0072	11-Nov-19	0.241 L	12-Nov-19 23:42	1
PFDoA	307-55-1	ND	1.55	5.19	10.4		B9K0072	11-Nov-19	0.241 L	12-Nov-19 23:42	1
PFTrDA	72629-94-8	ND	1.55	5.19	10.4		B9K0072	11-Nov-19	0.241 L	12-Nov-19 23:42	1
PFTeDA	376-06-7	ND	1.55	5.19	10.4		B9K0072	11-Nov-19	0.241 L	12-Nov-19 23:42	1
HFPO-DA	13252-13-6	ND	1.55	5.19	10.4		B9K0072	11-Nov-19	0.241 L	12-Nov-19 23:42	1
ADONA	919005-14-4	ND	1.55	5.19	10.4		B9K0072	11-Nov-19	0.241 L	12-Nov-19 23:42	1
9CI-PF3ONS	756426-58-1	ND	1.55	5.19	10.4		B9K0072	11-Nov-19	0.241 L	12-Nov-19 23:42	1
11CI-PF3OUdS	763051-92-9	ND	1.55	5.19	10.4		B9K0072	11-Nov-19	0.241 L	12-Nov-19 23:42	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	109	70 - 130			B9K0072	11-Nov-19	0.241 L	12-Nov-19 23:42	1	
13C2-PFDA	SURR	101	70 - 130			B9K0072	11-Nov-19	0.241 L	12-Nov-19 23:42	1	
d5-EtFOSAA	SURR	89.3	70 - 130			B9K0072	11-Nov-19	0.241 L	12-Nov-19 23:42	1	
13C3-HFPO-DA	SURR	104	70 - 130			B9K0072	11-Nov-19	0.241 L	12-Nov-19 23:42	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW11/16/20

**DATA VALIDATION SUMMARY REPORT
NAS WHIDBEY ISLAND, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon
 SDG: 1903917
 Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
 Site: NAS Whidbey Island, Residential Wells, CTO-4470, Washington
 Date: January 16, 2020

PFAS			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-A06-FB14-1119	1903917-01	Water
2	WI-AF-1RW77-1119	1903917-02	Water
3	WI-AF-1RW77P-1119	1903917-03	Water
4	WI-AF-1FB77-1119	1903917-04	Water
5	WI-AF-1RW28-1119	1903917-05	Water
6	WI-AF-1FB28-1119	1903917-06	Water
7	WI-AF-1RW12-1119	1903917-07	Water
8	WI-AF-1FB12-1119	1903917-08	Water
9	WI-A06-RW05-1119	1903917-09	Water
10	WI-A06-FB05-1119	1903917-10	Water

A full data validation was performed on the analytical data for five water samples and five aqueous field blank samples collected on November 5-6, 2019 by CH2M Hill at the NAS Whidbey Island site in Washington. The samples were analyzed under the EPA Method “Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)”.

Specific method references are as follows:

Analysis
PFAS

Method References
USEPA Method 537.1

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, DoD Final General Data Validation Guidelines, November 2019, and the USEPA Data Review and Validation Guidelines as follows:

- The USEPA “Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537,” November 2018;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 10% of the detected results in the samples.

Data Usability Assessment

There were no serious deficiencies of data.

Overall the data are acceptable for the intended purposes. There were no qualifications.

Perfluorinated Alkyl Substances (PFAS)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC sample results are summarized in the table below.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WI-A06-FB14-1119	None - ND	-	-	-
WI-AF-1FB77-1119	None - ND	-	-	-
WI-AF-1FB28-1119	None - ND	-	-	-
WI-AF-1FB12-1119	None - ND	-	-	-
WI-A06-FB05-1119	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- MS/MSD samples were not analyzed.

Laboratory Control Samples (LCS)

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- All criteria were met.

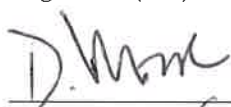
Field Duplicate Sample Precision

- Field duplicate results are summarized below. The precision was acceptable.

Compound	WI-AF-1RW77-1119 ng/L	WI-AF-1RW77P-1119 ng/L	RPD	Qualifier
PFHxS	15.7	16.4	4%	None
PFOA	10.8	11.4	5%	
PFOS	2.94	2.19	29%	

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed:



Nancy Weaver
Senior Chemist

Dated:

1/19/20

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

Sample ID: WI-A06-FB14-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903917-01	Column:	BEH C18
Project:	9000NVT3	Date Collected:	05-Nov-19 10:25	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.48	4.94	9.87		B9K0070	11-Nov-19	0.253 L	12-Nov-19 17:30	1
PFHxA	307-24-4	ND	1.48	4.94	9.87		B9K0070	11-Nov-19	0.253 L	12-Nov-19 17:30	1
PFHpA	375-85-9	ND	1.48	4.94	9.87		B9K0070	11-Nov-19	0.253 L	12-Nov-19 17:30	1
PFHxS	355-46-4	ND	1.48	4.94	9.87		B9K0070	11-Nov-19	0.253 L	12-Nov-19 17:30	1
PFOA	335-67-1	ND	1.48	4.94	9.87		B9K0070	11-Nov-19	0.253 L	12-Nov-19 17:30	1
PFNA	375-95-1	ND	1.48	4.94	9.87		B9K0070	11-Nov-19	0.253 L	12-Nov-19 17:30	1
PFOS	1763-25-1	ND	1.48	6.92	9.87		B9K0070	11-Nov-19	0.253 L	12-Nov-19 17:30	1
PFDA	335-76-2	ND	1.48	4.94	9.87		B9K0070	11-Nov-19	0.253 L	12-Nov-19 17:30	1
MeFOSAA	2355-31-9	ND	1.48	4.94	9.87		B9K0070	11-Nov-19	0.253 L	12-Nov-19 17:30	1
EtFOSAA	2991-50-6	ND	1.48	4.94	9.87		B9K0070	11-Nov-19	0.253 L	12-Nov-19 17:30	1
PFUnA	2058-94-8	ND	1.48	4.94	9.87		B9K0070	11-Nov-19	0.253 L	12-Nov-19 17:30	1
PFDoA	307-55-1	ND	1.48	4.94	9.87		B9K0070	11-Nov-19	0.253 L	12-Nov-19 17:30	1
PFTTrDA	72629-94-8	ND	1.48	4.94	9.87		B9K0070	11-Nov-19	0.253 L	12-Nov-19 17:30	1
PFTeDA	376-06-7	ND	1.48	4.94	9.87		B9K0070	11-Nov-19	0.253 L	12-Nov-19 17:30	1
HFPO-DA	13252-13-6	ND	1.48	4.94	9.87		B9K0070	11-Nov-19	0.253 L	12-Nov-19 17:30	1
ADONA	919005-14-4	ND	1.48	4.94	9.87		B9K0070	11-Nov-19	0.253 L	12-Nov-19 17:30	1
9CI-PF3ONS	756426-58-1	ND	1.48	4.94	9.87		B9K0070	11-Nov-19	0.253 L	12-Nov-19 17:30	1
11CI-PF3OUdS	763051-92-9	ND	1.48	4.94	9.87		B9K0070	11-Nov-19	0.253 L	12-Nov-19 17:30	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102		70 - 130			B9K0070	11-Nov-19	0.253 L	12-Nov-19 17:30	1
13C2-PFDA	SURR	101		70 - 130			B9K0070	11-Nov-19	0.253 L	12-Nov-19 17:30	1
d5-EtFOSAA	SURR	98.3		70 - 130			B9K0070	11-Nov-19	0.253 L	12-Nov-19 17:30	1
13C3-HFPO-DA	SURR	105		70 - 130			B9K0070	11-Nov-19	0.253 L	12-Nov-19 17:30	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 11/16/20

Sample ID: WI-AF-1RW77-1119 **EPA Method 537.1**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903917-02	Column:	BEH C18
Project:	9000NVT3	Date Collected:	05-Nov-19 13:20	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.52	5.06	10.1		B9K0070	11-Nov-19	0.247 L	12-Nov-19 17:41	1
PFHxA	307-24-4	ND	1.52	5.06	10.1		B9K0070	11-Nov-19	0.247 L	12-Nov-19 17:41	1
PFHpA	375-85-9	ND	1.52	5.06	10.1		B9K0070	11-Nov-19	0.247 L	12-Nov-19 17:41	1
PFHxS	355-46-4	15.7	1.52	5.06	10.1		B9K0070	11-Nov-19	0.247 L	12-Nov-19 17:41	1
PFOA	335-67-1	10.8	1.52	5.06	10.1		B9K0070	11-Nov-19	0.247 L	12-Nov-19 17:41	1
PFNA	375-95-1	ND	1.52	5.06	10.1		B9K0070	11-Nov-19	0.247 L	12-Nov-19 17:41	1
PFOS	1763-23-1	2.94	1.52	7.09	10.1	J	B9K0070	11-Nov-19	0.247 L	12-Nov-19 17:41	1
PFDA	335-76-2	ND	1.52	5.06	10.1		B9K0070	11-Nov-19	0.247 L	12-Nov-19 17:41	1
MeFOSAA	2355-31-9	ND	1.52	5.06	10.1		B9K0070	11-Nov-19	0.247 L	12-Nov-19 17:41	1
EtFOSAA	2991-50-6	ND	1.52	5.06	10.1		B9K0070	11-Nov-19	0.247 L	12-Nov-19 17:41	1
PFUnA	2058-94-8	ND	1.52	5.06	10.1		B9K0070	11-Nov-19	0.247 L	12-Nov-19 17:41	1
PFDoA	307-55-1	ND	1.52	5.06	10.1		B9K0070	11-Nov-19	0.247 L	12-Nov-19 17:41	1
PFTTrDA	72629-94-8	ND	1.52	5.06	10.1		B9K0070	11-Nov-19	0.247 L	12-Nov-19 17:41	1
PFTeDA	376-06-7	ND	1.52	5.06	10.1		B9K0070	11-Nov-19	0.247 L	12-Nov-19 17:41	1
HFPO-DA	13252-13-6	ND	1.52	5.06	10.1		B9K0070	11-Nov-19	0.247 L	12-Nov-19 17:41	1
ADONA	919005-14-4	ND	1.52	5.06	10.1		B9K0070	11-Nov-19	0.247 L	12-Nov-19 17:41	1
9Cl-PF3ONS	756426-58-1	ND	1.52	5.06	10.1		B9K0070	11-Nov-19	0.247 L	12-Nov-19 17:41	1
11Cl-PF3OUdS	763051-92-9	ND	1.52	5.06	10.1		B9K0070	11-Nov-19	0.247 L	12-Nov-19 17:41	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	96.7	70 - 130		B9K0070	11-Nov-19	0.247 L	12-Nov-19 17:41	1
13C2-PFDA	SURR	89.2	70 - 130		B9K0070	11-Nov-19	0.247 L	12-Nov-19 17:41	1
d5-EtFOSAA	SURR	89.2	70 - 130		B9K0070	11-Nov-19	0.247 L	12-Nov-19 17:41	1
13C3-HFPO-DA	SURR	93.2	70 - 130		B9K0070	11-Nov-19	0.247 L	12-Nov-19 17:41	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

Results reported to the DL.

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

mw 1/16/20

Sample ID: WI-AF-1RW77P-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903917-03	Column:	BEH C18
Project:	9000NVT3	Date Collected:	05-Nov-19 13:25	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 17:51	1
PFHxA	307-24-4	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 17:51	1
PFHpA	375-85-9	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 17:51	1
PFHxS	355-46-4	16.4	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 17:51	1
PFOA	335-67-1	11.4	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 17:51	1
PFNA	375-95-1	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 17:51	1
PFOS	1763-23-1	2.19	1.51	7.06	10.1	J	B9K0070	11-Nov-19	0.248 L	12-Nov-19 17:51	1
PFDA	335-76-2	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 17:51	1
MeFOSAA	2355-31-9	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 17:51	1
EtFOSAA	2991-50-6	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 17:51	1
PFUnA	2058-94-8	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 17:51	1
PFDoA	307-55-1	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 17:51	1
PFTTrDA	72629-94-8	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 17:51	1
PFTeDA	376-06-7	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 17:51	1
HFPO-DA	13252-13-6	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 17:51	1
ADONA	919005-14-4	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 17:51	1
9CI-PF3ONS	756426-58-1	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 17:51	1
11CI-PF3OUdS	763051-92-9	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 17:51	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	107		70 - 130			B9K0070	11-Nov-19	0.248 L	12-Nov-19 17:51	1
13C2-PFDA	SURR	98.3		70 - 130			B9K0070	11-Nov-19	0.248 L	12-Nov-19 17:51	1
d5-EtFOSAA	SURR	98.2		70 - 130			B9K0070	11-Nov-19	0.248 L	12-Nov-19 17:51	1
13C3-HFPO-DA	SURR	101		70 - 130			B9K0070	11-Nov-19	0.248 L	12-Nov-19 17:51	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw 11/16/20

Sample ID: WI-AF-1FB77-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903917-04	Column:	BEH C18
Project:	9000NVT3	Date Collected:	05-Nov-19 13:20	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.48	4.92	9.86		B9K0070	11-Nov-19	0.254 L	12-Nov-19 18:02	1
PFHxA	307-24-4	ND	1.48	4.92	9.86		B9K0070	11-Nov-19	0.254 L	12-Nov-19 18:02	1
PFHpA	375-85-9	ND	1.48	4.92	9.86		B9K0070	11-Nov-19	0.254 L	12-Nov-19 18:02	1
PFHxS	355-46-4	ND	1.48	4.92	9.86		B9K0070	11-Nov-19	0.254 L	12-Nov-19 18:02	1
PFOA	335-67-1	ND	1.48	4.92	9.86		B9K0070	11-Nov-19	0.254 L	12-Nov-19 18:02	1
PFNA	375-95-1	ND	1.48	4.92	9.86		B9K0070	11-Nov-19	0.254 L	12-Nov-19 18:02	1
PFOS	1763-23-1	ND	1.48	6.89	9.86		B9K0070	11-Nov-19	0.254 L	12-Nov-19 18:02	1
PFDA	335-76-2	ND	1.48	4.92	9.86		B9K0070	11-Nov-19	0.254 L	12-Nov-19 18:02	1
MeFOSAA	2355-31-9	ND	1.48	4.92	9.86		B9K0070	11-Nov-19	0.254 L	12-Nov-19 18:02	1
EtFOSAA	2991-50-6	ND	1.48	4.92	9.86		B9K0070	11-Nov-19	0.254 L	12-Nov-19 18:02	1
PFUnA	2058-94-8	ND	1.48	4.92	9.86		B9K0070	11-Nov-19	0.254 L	12-Nov-19 18:02	1
PFDoA	307-55-1	ND	1.48	4.92	9.86		B9K0070	11-Nov-19	0.254 L	12-Nov-19 18:02	1
PFTTrDA	72629-94-8	ND	1.48	4.92	9.86		B9K0070	11-Nov-19	0.254 L	12-Nov-19 18:02	1
PFTeDA	376-06-7	ND	1.48	4.92	9.86		B9K0070	11-Nov-19	0.254 L	12-Nov-19 18:02	1
HFPO-DA	13252-13-6	ND	1.48	4.92	9.86		B9K0070	11-Nov-19	0.254 L	12-Nov-19 18:02	1
ADONA	919005-14-4	ND	1.48	4.92	9.86		B9K0070	11-Nov-19	0.254 L	12-Nov-19 18:02	1
9CI-PF3ONS	756426-58-1	ND	1.48	4.92	9.86		B9K0070	11-Nov-19	0.254 L	12-Nov-19 18:02	1
11CI-PF3OUdS	763051-92-9	ND	1.48	4.92	9.86		B9K0070	11-Nov-19	0.254 L	12-Nov-19 18:02	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104		70 - 130			B9K0070	11-Nov-19	0.254 L	12-Nov-19 18:02	1
13C2-PFDA	SURR	103		70 - 130			B9K0070	11-Nov-19	0.254 L	12-Nov-19 18:02	1
d5-EtFOSAA	SURR	97.9		70 - 130			B9K0070	11-Nov-19	0.254 L	12-Nov-19 18:02	1
13C3-HFPO-DA	SURR	99.5		70 - 130			B9K0070	11-Nov-19	0.254 L	12-Nov-19 18:02	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 11/1/20

Sample ID: WI-AF-1RW28-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903917-05	Column:	BEH C18
Project:	9000NVT3	Date Collected:	05-Nov-19 16:30	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	2.28	1.51	5.02	10.1	J	B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:13	1
PFHxA	307-24-4	5.43	1.51	5.02	10.1	J	B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:13	1
PFHpA	375-85-9	3.76	1.51	5.02	10.1	J	B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:13	1
PFHxS	355-46-4	8.68	1.51	5.02	10.1	J	B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:13	1
PFOA	335-67-1	28.8	1.51	5.02	10.1		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:13	1
PFNA	375-95-1	ND	1.51	5.02	10.1		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:13	1
PFOS	1763-23-1	ND	1.51	7.03	10.1		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:13	1
PFDA	335-76-2	ND	1.51	5.02	10.1		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:13	1
MeFOSAA	2355-31-9	ND	1.51	5.02	10.1		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:13	1
EtFOSAA	2991-50-6	ND	1.51	5.02	10.1		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:13	1
PFOuA	2058-94-8	ND	1.51	5.02	10.1		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:13	1
PFDoA	307-55-1	ND	1.51	5.02	10.1		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:13	1
PFTTrDA	72629-94-8	ND	1.51	5.02	10.1		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:13	1
PFTeDA	376-06-7	ND	1.51	5.02	10.1		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:13	1
HFPO-DA	13252-13-6	ND	1.51	5.02	10.1		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:13	1
ADONA	919005-14-4	ND	1.51	5.02	10.1		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:13	1
9CI-PF3ONS	756426-58-1	ND	1.51	5.02	10.1		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:13	1
11CI-PF3OUdS	763051-92-9	ND	1.51	5.02	10.1		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:13	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	108	70 - 130		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:13	1
13C2-PFDA	SURR	110	70 - 130		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:13	1
d5-EtFOSAA	SURR	93.0	70 - 130		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:13	1
13C3-HFPO-DA	SURR	105	70 - 130		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:13	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL

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

nr. 11/16/20

Sample ID: WI-AF-1FB28-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903917-06	Column:	BEH C18
Project:	9000NVT3	Date Collected:	05-Nov-19 16:30	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 18:23	1
PFHxA	307-24-4	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 18:23	1
PFHpA	375-85-9	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 18:23	1
PFHxS	355-46-4	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 18:23	1
PFOA	335-67-1	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 18:23	1
PFNA	375-95-1	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 18:23	1
PFOS	1763-23-1	ND	1.51	7.06	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 18:23	1
PFDA	335-76-2	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 18:23	1
MeFOSAA	2355-31-9	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 18:23	1
EtFOSAA	2991-50-6	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 18:23	1
PFUnA	2058-94-8	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 18:23	1
PFDoA	307-55-1	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 18:23	1
PFTTrDA	72629-94-8	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 18:23	1
PFTeDA	376-06-7	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 18:23	1
HFPO-DA	13252-13-6	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 18:23	1
ADONA	919005-14-4	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 18:23	1
9Cl-PF3ONS	756426-58-1	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 18:23	1
11Cl-PF3OUdS	763051-92-9	ND	1.51	5.04	10.1		B9K0070	11-Nov-19	0.248 L	12-Nov-19 18:23	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	118	70 - 130		B9K0070	11-Nov-19	0.248 L	12-Nov-19 18:23	1
13C2-PFDA	SURR	112	70 - 130		B9K0070	11-Nov-19	0.248 L	12-Nov-19 18:23	1
d5-EtFOSAA	SURR	106	70 - 130		B9K0070	11-Nov-19	0.248 L	12-Nov-19 18:23	1
13C3-HFPO-DA	SURR	120	70 - 130		B9K0070	11-Nov-19	0.248 L	12-Nov-19 18:23	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL

LOQ - Limit of quantitation

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

new 11/16/20

Sample ID: WI-AF-1RW12-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903917-07	Column:	BEH C18
Project:	9000NVT3	Date Collected:	05-Nov-19 11:15	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.50	5.02	10.0		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:34	1
PFHxA	307-24-4	ND	1.50	5.02	10.0		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:34	1
PFHpA	375-85-9	ND	1.50	5.02	10.0		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:34	1
PFHxS	355-46-4	ND	1.50	5.02	10.0		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:34	1
PFOA	335-67-1	ND	1.50	5.02	10.0		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:34	1
PFNA	375-95-1	ND	1.50	5.02	10.0		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:34	1
PFOS	1763-23-1	ND	1.50	7.03	10.0		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:34	1
PFDA	335-76-2	ND	1.50	5.02	10.0		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:34	1
MeFOSAA	2355-31-9	ND	1.50	5.02	10.0		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:34	1
EtFOSAA	2991-50-6	ND	1.50	5.02	10.0		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:34	1
PFUnA	2058-94-8	ND	1.50	5.02	10.0		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:34	1
PFDoA	307-55-1	ND	1.50	5.02	10.0		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:34	1
PFTeDA	72629-94-8	ND	1.50	5.02	10.0		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:34	1
PFTeDA	376-06-7	ND	1.50	5.02	10.0		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:34	1
HFPO-DA	13252-13-6	ND	1.50	5.02	10.0		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:34	1
ADONA	919005-14-4	ND	1.50	5.02	10.0		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:34	1
9CI-PF3ONS	756426-58-1	ND	1.50	5.02	10.0		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:34	1
11CI-PF3OUdS	763051-92-9	ND	1.50	5.02	10.0		B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:34	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	108		70 - 130			B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:34	1
13C2-PFDA	SURR	109		70 - 130			B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:34	1
d5-EtFOSAA	SURR	98.0		70 - 130			B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:34	1
13C3-HFPO-DA	SURR	112		70 - 130			B9K0070	11-Nov-19	0.249 L	12-Nov-19 18:34	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw116/20

Sample ID: WI-AF-1FB12-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903917-08	Column:	BEH C18
Project:	9000NVT3	Date Collected:	05-Nov-19 11:15	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.49	4.96	9.91		B9K0070	11-Nov-19	0.252 L	12-Nov-19 18:45	1
PFHxA	307-24-4	ND	1.49	4.96	9.91		B9K0070	11-Nov-19	0.252 L	12-Nov-19 18:45	1
PFHpA	375-85-9	ND	1.49	4.96	9.91		B9K0070	11-Nov-19	0.252 L	12-Nov-19 18:45	1
PFHxS	355-46-4	ND	1.49	4.96	9.91		B9K0070	11-Nov-19	0.252 L	12-Nov-19 18:45	1
PFOA	335-67-1	ND	1.49	4.96	9.91		B9K0070	11-Nov-19	0.252 L	12-Nov-19 18:45	1
PFNA	375-95-1	ND	1.49	4.96	9.91		B9K0070	11-Nov-19	0.252 L	12-Nov-19 18:45	1
PFOS	1763-23-1	ND	1.49	6.94	9.91		B9K0070	11-Nov-19	0.252 L	12-Nov-19 18:45	1
PFDA	335-76-2	ND	1.49	4.96	9.91		B9K0070	11-Nov-19	0.252 L	12-Nov-19 18:45	1
MeFOSAA	2355-31-9	ND	1.49	4.96	9.91		B9K0070	11-Nov-19	0.252 L	12-Nov-19 18:45	1
EtFOSAA	2991-50-6	ND	1.49	4.96	9.91		B9K0070	11-Nov-19	0.252 L	12-Nov-19 18:45	1
PFUnA	2058-94-8	ND	1.49	4.96	9.91		B9K0070	11-Nov-19	0.252 L	12-Nov-19 18:45	1
PFDoA	307-55-1	ND	1.49	4.96	9.91		B9K0070	11-Nov-19	0.252 L	12-Nov-19 18:45	1
PFTTrDA	72629-94-8	ND	1.49	4.96	9.91		B9K0070	11-Nov-19	0.252 L	12-Nov-19 18:45	1
PFTeDA	376-06-7	ND	1.49	4.96	9.91		B9K0070	11-Nov-19	0.252 L	12-Nov-19 18:45	1
HFPO-DA	13252-13-6	ND	1.49	4.96	9.91		B9K0070	11-Nov-19	0.252 L	12-Nov-19 18:45	1
ADONA	919005-14-4	ND	1.49	4.96	9.91		B9K0070	11-Nov-19	0.252 L	12-Nov-19 18:45	1
9CI-PF3ONS	756426-58-1	ND	1.49	4.96	9.91		B9K0070	11-Nov-19	0.252 L	12-Nov-19 18:45	1
11CI-PF3OUdS	763051-92-9	ND	1.49	4.96	9.91		B9K0070	11-Nov-19	0.252 L	12-Nov-19 18:45	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	93.9		70 - 130			B9K0070	11-Nov-19	0.252 L	12-Nov-19 18:45	1
13C2-PFDA	SURR	88.7		70 - 130			B9K0070	11-Nov-19	0.252 L	12-Nov-19 18:45	1
d5-EtFOSAA	SURR	92.0		70 - 130			B9K0070	11-Nov-19	0.252 L	12-Nov-19 18:45	1
13C3-HFPO-DA	SURR	94.0		70 - 130			B9K0070	11-Nov-19	0.252 L	12-Nov-19 18:45	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

mw/116/20

Sample ID: WI-A06-RW05-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903917-09	Column:	BEH C18
Project:	9000NVT3	Date Collected:	06-Nov-19 08:00	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	21.0	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 18:55	1
PFHxA	307-24-4	50.2	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 18:55	1
PFHpA	375-85-9	17.9	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 18:55	1
PFHxS	355-46-4	169	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 18:55	1
PFOA	335-67-1	52.0	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 18:55	1
PFNA	375-95-1	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 18:55	1
PFOS	1763-23-1	76.1	1.50	7.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 18:55	1
PFDA	335-76-2	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 18:55	1
MeFOSAA	2355-31-9	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 18:55	1
EtFOSAA	2991-50-6	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 18:55	1
PFUnA	2058-94-8	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 18:55	1
PFDoA	307-55-1	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 18:55	1
PFTTrDA	72629-94-8	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 18:55	1
PFTeDA	376-06-7	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 18:55	1
HFPO-DA	13252-13-6	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 18:55	1
ADONA	919005-14-4	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 18:55	1
9CI-PF3ONS	756426-58-1	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 18:55	1
11CI-PF3OUdS	763051-92-9	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 18:55	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	108	70 - 130			B9K0070	11-Nov-19	0.250 L	12-Nov-19 18:55	1	
13C2-PFDA	SURR	103	70 - 130			B9K0070	11-Nov-19	0.250 L	12-Nov-19 18:55	1	
d5-EtFOSAA	SURR	100	70 - 130			B9K0070	11-Nov-19	0.250 L	12-Nov-19 18:55	1	
13C3-HFPO-DA	SURR	102	70 - 130			B9K0070	11-Nov-19	0.250 L	12-Nov-19 18:55	1	

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

Results reported to the DL.

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

11/16/20

Sample ID: WI-A06-FB05-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903917-10	Column:	BEH C18
Project:	9000NVT3	Date Collected:	06-Nov-19 08:00	Date Received:	07-Nov-19 09:54		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 19:38	1
PFHxA	307-24-4	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 19:38	1
PFHpA	375-85-9	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 19:38	1
PFHxS	355-46-4	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 19:38	1
PFOA	335-67-1	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 19:38	1
PFNA	375-95-1	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 19:38	1
PFOS	1763-23-1	ND	1.50	7.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 19:38	1
PFDA	335-76-2	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 19:38	1
MeFOSAA	2355-31-9	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 19:38	1
EtFOSAA	2991-50-6	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 19:38	1
PFUnA	2058-94-8	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 19:38	1
PFDoA	307-55-1	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 19:38	1
PFTrDA	72629-94-8	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 19:38	1
PFTeDA	376-06-7	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 19:38	1
HFPO-DA	13252-13-6	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 19:38	1
ADONA	919005-14-4	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 19:38	1
9CI-PF3ONS	756426-58-1	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 19:38	1
11CI-PF3OUdS	763051-92-9	ND	1.50	5.00	10.0		B9K0070	11-Nov-19	0.250 L	12-Nov-19 19:38	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	111	70 - 130			B9K0070	11-Nov-19	0.250 L	12-Nov-19 19:38	1	
13C2-PFDA	SURR	105	70 - 130			B9K0070	11-Nov-19	0.250 L	12-Nov-19 19:38	1	
d5-EtFOSAA	SURR	102	70 - 130			B9K0070	11-Nov-19	0.250 L	12-Nov-19 19:38	1	
13C3-HFPO-DA	SURR	113	70 - 130			B9K0070	11-Nov-19	0.250 L	12-Nov-19 19:38	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

Nov 11/16/20

**DATA VALIDATION SUMMARY REPORT
NAS WHIDBEY ISLAND, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon
 SDG: 1903978
 Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
 Site: NAS Whidbey Island, Residential Wells, CTO-4470, Washington
 Date: January 16, 2020

PFAS			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-CV-1RW09-1119	1903978-01	Water
2	WI-CV-1FB09-1119	1903978-02	Water
3	WI-CV-1RW10-1119	1903978-03	Water
4	WI-CV-1FB10-1119	1903978-04	Water
5	WI-CV-3RW18-1119	1903978-05	Water
6	WI-CV-3RW18P-1119	1903978-06	Water
7	WI-CV-3FB18-1119	1903978-07	Water
8	WI-CV-1RW20-1119	1903978-08	Water
9	WI-CV-1FB20-1119	1903978-09	Water
10	WI-CV-1RW67-1119	1903978-10	Water
11	WI-CV-1FB67-1119	1903978-11	Water

A full data validation was performed on the analytical data for six water samples and five aqueous field blank samples collected on November 6-8, 2019 by CH2M Hill at the NAS Whidbey Island site in Washington. The samples were analyzed under the EPA Method “Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)”.

Specific method references are as follows:

Analysis
PFAS

Method References
USEPA Method 537.1

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, DoD Final General Data Validation Guidelines, November 2019, and the USEPA Data Review and Validation Guidelines as follows:

- The USEPA “Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537,” November 2018;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 10% of the detected results in the samples.

Data Usability Assessment

There were no serious deficiencies of data.

Overall the data are acceptable for the intended purposes. There were no qualifications.

Perfluorinated Alkyl Substances (PFAS)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC sample results are summarized in the table below.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WI-CV-1FB09-1119	None - ND	-	-	-
WI-CV-1FB10-1119	None - ND	-	-	-
WI-CV-3FB18-1119	None - ND	-	-	-
WI-CV-1FB20-1119	None - ND	-	-	-
WI-CV-1FB67-1119	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- MS/MSD samples were not analyzed.

Laboratory Control Samples (LCS)

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- All criteria were met.

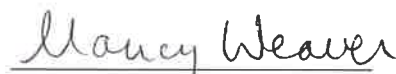
Field Duplicate Sample Precision

- Field duplicate results are summarized below. The precision was acceptable.

Compound	WI-CV-3RW18-1119 ng/L	WI-CV-3RW18P-1119 ng/L	RPD	Qualifier
None	ND	ND	-	-

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed:



Nancy Weaver
Senior Chemist

Dated: 1/19/20

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

Sample ID: WI-CV-1RW09-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903978-01	Column:	BEH C18
Project:	9000NVT3	Date Collected:	06-Nov-19 16:35	Date Received:	12-Nov-19 10:00		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	4.36	1.51	5.04	10.1	J	B9K0107	15-Nov-19	0.248 L	25-Nov-19 11:53	1
PFHxA	307-24-4	ND	1.51	5.04	10.1		B9K0107	15-Nov-19	0.248 L	25-Nov-19 11:53	1
PFHpA	375-85-9	ND	1.51	5.04	10.1		B9K0107	15-Nov-19	0.248 L	25-Nov-19 11:53	1
PFHxS	355-46-4	ND	1.51	5.04	10.1		B9K0107	15-Nov-19	0.248 L	25-Nov-19 11:53	1
PFOA	335-67-1	ND	1.51	5.04	10.1		B9K0107	15-Nov-19	0.248 L	25-Nov-19 11:53	1
PFNA	375-95-1	ND	1.51	5.04	10.1		B9K0107	15-Nov-19	0.248 L	25-Nov-19 11:53	1
PFOS	1763-23-1	ND	1.51	7.06	10.1		B9K0107	15-Nov-19	0.248 L	25-Nov-19 11:53	1
PFDA	335-76-2	ND	1.51	5.04	10.1		B9K0107	15-Nov-19	0.248 L	25-Nov-19 11:53	1
MeFOSAA	2355-31-9	ND	1.51	5.04	10.1		B9K0107	15-Nov-19	0.248 L	25-Nov-19 11:53	1
EtFOSAA	2991-50-6	ND	1.51	5.04	10.1		B9K0107	15-Nov-19	0.248 L	25-Nov-19 11:53	1
PFUnA	2058-94-8	ND	1.51	5.04	10.1		B9K0107	15-Nov-19	0.248 L	25-Nov-19 11:53	1
PFDoA	307-55-1	ND	1.51	5.04	10.1		B9K0107	15-Nov-19	0.248 L	25-Nov-19 11:53	1
PFTTrDA	72629-94-8	ND	1.51	5.04	10.1		B9K0107	15-Nov-19	0.248 L	25-Nov-19 11:53	1
PFTeDA	376-06-7	ND	1.51	5.04	10.1		B9K0107	15-Nov-19	0.248 L	25-Nov-19 11:53	1
HFPO-DA	13252-13-6	ND	1.51	5.04	10.1		B9K0107	15-Nov-19	0.248 L	25-Nov-19 11:53	1
ADONA	919005-14-4	ND	1.51	5.04	10.1		B9K0107	15-Nov-19	0.248 L	25-Nov-19 11:53	1
9CI-PF3ONS	756426-58-1	ND	1.51	5.04	10.1		B9K0107	15-Nov-19	0.248 L	25-Nov-19 11:53	1
11CI-PF3OUdS	763051-92-9	ND	1.51	5.04	10.1		B9K0107	15-Nov-19	0.248 L	25-Nov-19 11:53	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	109	70 - 130		B9K0107	15-Nov-19	0.248 L	25-Nov-19 11:53	1
13C2-PFDA	SURR	121	70 - 130		B9K0107	15-Nov-19	0.248 L	25-Nov-19 11:53	1
d5-EtFOSAA	SURR	86.3	70 - 130		B9K0107	15-Nov-19	0.248 L	25-Nov-19 11:53	1
13C3-HFPO-DA	SURR	108	70 - 130		B9K0107	15-Nov-19	0.248 L	25-Nov-19 11:53	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

Results reported to the DL.

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

NW 1/16/20

Sample ID: WI-CV-1FB09-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903978-02	Column:	BEH C18
Project:	9000NVT3	Date Collected:	06-Nov-19 16:35	Date Received:	12-Nov-19 10:00		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.49	4.96	9.92		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:04	1
PFHxA	307-24-4	ND	1.49	4.96	9.92		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:04	1
PFHpA	375-85-9	ND	1.49	4.96	9.92		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:04	1
PFHxS	355-46-4	ND	1.49	4.96	9.92		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:04	1
PFOA	335-67-1	ND	1.49	4.96	9.92		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:04	1
PFNA	375-95-1	ND	1.49	4.96	9.92		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:04	1
PFOS	1763-23-1	ND	1.49	6.94	9.92		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:04	1
PFDA	335-76-2	ND	1.49	4.96	9.92		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:04	1
MeFOSAA	2355-31-9	ND	1.49	4.96	9.92		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:04	1
EtFOSAA	2991-50-6	ND	1.49	4.96	9.92		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:04	1
PFUnA	2058-94-8	ND	1.49	4.96	9.92		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:04	1
PFDoA	307-55-1	ND	1.49	4.96	9.92		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:04	1
PFTTrDA	72629-94-8	ND	1.49	4.96	9.92		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:04	1
PFTeDA	376-06-7	ND	1.49	4.96	9.92		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:04	1
HFPO-DA	13252-13-6	ND	1.49	4.96	9.92		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:04	1
ADONA	919005-14-4	ND	1.49	4.96	9.92		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:04	1
9CI-PF3ONS	756426-58-1	ND	1.49	4.96	9.92		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:04	1
11CI-PF3OUdS	763051-92-9	ND	1.49	4.96	9.92		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:04	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	109	70 - 130			B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:04	1	
13C2-PFDA	SURR	126	70 - 130			B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:04	1	
d5-EtFOSAA	SURR	98.9	70 - 130			B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:04	1	
13C3-HFPO-DA	SURR	110	70 - 130			B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:04	1	

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL

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

MW, 11/6/20

Sample ID: WI-CV-1RW10-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903978-03	Column:	BEH C18
Project:	9000NVT3	Date Collected:	06-Nov-19 16:50	Date Received:	12-Nov-19 10:00		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.49	4.96	9.93		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:15	1
PFHxA	307-24-4	ND	1.49	4.96	9.93		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:15	1
PFHpA	375-85-9	ND	1.49	4.96	9.93		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:15	1
PFHxS	355-46-4	ND	1.49	4.96	9.93		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:15	1
PFOA	335-67-1	ND	1.49	4.96	9.93		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:15	1
PFNA	375-95-1	ND	1.49	4.96	9.93		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:15	1
PFOS	1763-23-1	ND	1.49	6.94	9.93		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:15	1
PFDA	335-76-2	ND	1.49	4.96	9.93		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:15	1
MeFOSAA	2355-31-9	ND	1.49	4.96	9.93		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:15	1
EtFOSAA	2991-50-6	ND	1.49	4.96	9.93		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:15	1
PFUnA	2058-94-8	ND	1.49	4.96	9.93		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:15	1
PFDoA	307-55-1	ND	1.49	4.96	9.93		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:15	1
PFTTrDA	72629-94-8	ND	1.49	4.96	9.93		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:15	1
PFTeDA	376-06-7	ND	1.49	4.96	9.93		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:15	1
HFPO-DA	13252-13-6	ND	1.49	4.96	9.93		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:15	1
ADONA	919005-14-4	ND	1.49	4.96	9.93		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:15	1
9CI-PF3ONS	756426-58-1	ND	1.49	4.96	9.93		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:15	1
11CI-PF3OUdS	763051-92-9	ND	1.49	4.96	9.93		B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:15	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	109	70 - 130			B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:15	1	
13C2-PFDA	SURR	125	70 - 130			B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:15	1	
d5-EtFOSAA	SURR	93.4	70 - 130			B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:15	1	
13C3-HFPO-DA	SURR	107	70 - 130			B9K0107	15-Nov-19	0.252 L	25-Nov-19 12:15	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL

LOQ - Limit of quantitation

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

MW 11/16/20

Sample ID: WI-CV-1FB10-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903978-04	Column:	BEH C18
Project:	9000NVT3	Date Collected:	06-Nov-19 16:50	Date Received:	12-Nov-19 10:00		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.49	4.98	9.96		B9K0107	15-Nov-19	0.251 L	04-Dec-19 18:06	1
PFHxA	307-24-4	ND	1.49	4.98	9.96		B9K0107	15-Nov-19	0.251 L	04-Dec-19 18:06	1
PFHpA	375-85-9	ND	1.49	4.98	9.96		B9K0107	15-Nov-19	0.251 L	04-Dec-19 18:06	1
PFHxS	355-46-4	ND	1.49	4.98	9.96		B9K0107	15-Nov-19	0.251 L	04-Dec-19 18:06	1
PFOA	335-67-1	ND	1.49	4.98	9.96		B9K0107	15-Nov-19	0.251 L	04-Dec-19 18:06	1
PFNA	375-95-1	ND	1.49	4.98	9.96		B9K0107	15-Nov-19	0.251 L	04-Dec-19 18:06	1
PFOS	1763-23-1	ND	1.49	6.97	9.96		B9K0107	15-Nov-19	0.251 L	04-Dec-19 18:06	1
PFDA	335-76-2	ND	1.49	4.98	9.96		B9K0107	15-Nov-19	0.251 L	04-Dec-19 18:06	1
MeFOSAA	2355-31-9	ND	1.49	4.98	9.96		B9K0107	15-Nov-19	0.251 L	04-Dec-19 18:06	1
EtFOSAA	2991-50-6	ND	1.49	4.98	9.96		B9K0107	15-Nov-19	0.251 L	04-Dec-19 18:06	1
PFUnA	2058-94-8	ND	1.49	4.98	9.96		B9K0107	15-Nov-19	0.251 L	04-Dec-19 18:06	1
PFDoA	307-55-1	ND	1.49	4.98	9.96		B9K0107	15-Nov-19	0.251 L	04-Dec-19 18:06	1
PFTTrDA	72629-94-8	ND	1.49	4.98	9.96		B9K0107	15-Nov-19	0.251 L	04-Dec-19 18:06	1
PFTeDA	376-06-7	ND	1.49	4.98	9.96		B9K0107	15-Nov-19	0.251 L	04-Dec-19 18:06	1
HFPO-DA	13252-13-6	ND	1.49	4.98	9.96		B9K0107	15-Nov-19	0.251 L	04-Dec-19 18:06	1
ADONA	919005-14-4	ND	1.49	4.98	9.96		B9K0107	15-Nov-19	0.251 L	04-Dec-19 18:06	1
9CI-PF3ONS	756426-58-1	ND	1.49	4.98	9.96		B9K0107	15-Nov-19	0.251 L	04-Dec-19 18:06	1
11CI-PF3OUdS	763051-92-9	ND	1.49	4.98	9.96		B9K0107	15-Nov-19	0.251 L	04-Dec-19 18:06	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	97.7		70 - 130			B9K0107	15-Nov-19	0.251 L	04-Dec-19 18:06	1
13C2-PFDA	SURR	90.2		70 - 130			B9K0107	15-Nov-19	0.251 L	04-Dec-19 18:06	1
d5-EtFOSAA	SURR	98.3		70 - 130			B9K0107	15-Nov-19	0.251 L	04-Dec-19 18:06	1
13C3-HFPO-DA	SURR	92.8		70 - 130			B9K0107	15-Nov-19	0.251 L	04-Dec-19 18:06	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

mwil16/20

Sample ID: WI-CV-3RW18-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903978-05	Column:	BEH C18
Project:	9000NVT3	Date Collected:	08-Nov-19 08:10	Date Received:	12-Nov-19 10:00		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.52	5.06	10.1		B9K0107	15-Nov-19	0.247 L	04-Dec-19 18:17	1
PFHxA	307-24-4	ND	1.52	5.06	10.1		B9K0107	15-Nov-19	0.247 L	04-Dec-19 18:17	1
PFHpA	375-85-9	ND	1.52	5.06	10.1		B9K0107	15-Nov-19	0.247 L	04-Dec-19 18:17	1
PFHxS	355-46-4	ND	1.52	5.06	10.1		B9K0107	15-Nov-19	0.247 L	04-Dec-19 18:17	1
PFOA	335-67-1	ND	1.52	5.06	10.1		B9K0107	15-Nov-19	0.247 L	04-Dec-19 18:17	1
PFNA	375-95-1	ND	1.52	5.06	10.1		B9K0107	15-Nov-19	0.247 L	04-Dec-19 18:17	1
PFOS	1763-23-1	ND	1.52	7.09	10.1		B9K0107	15-Nov-19	0.247 L	04-Dec-19 18:17	1
PFDA	335-76-2	ND	1.52	5.06	10.1		B9K0107	15-Nov-19	0.247 L	04-Dec-19 18:17	1
MeFOSAA	2355-31-9	ND	1.52	5.06	10.1		B9K0107	15-Nov-19	0.247 L	04-Dec-19 18:17	1
EtFOSAA	2991-50-6	ND	1.52	5.06	10.1		B9K0107	15-Nov-19	0.247 L	04-Dec-19 18:17	1
PFUnA	2058-94-8	ND	1.52	5.06	10.1		B9K0107	15-Nov-19	0.247 L	04-Dec-19 18:17	1
PFDoA	307-55-1	ND	1.52	5.06	10.1		B9K0107	15-Nov-19	0.247 L	04-Dec-19 18:17	1
PFTTrDA	72629-94-8	ND	1.52	5.06	10.1		B9K0107	15-Nov-19	0.247 L	04-Dec-19 18:17	1
PFTeDA	376-06-7	ND	1.52	5.06	10.1		B9K0107	15-Nov-19	0.247 L	04-Dec-19 18:17	1
HFPO-DA	13252-13-6	ND	1.52	5.06	10.1		B9K0107	15-Nov-19	0.247 L	04-Dec-19 18:17	1
ADONA	919005-14-4	ND	1.52	5.06	10.1		B9K0107	15-Nov-19	0.247 L	04-Dec-19 18:17	1
9CI-PF3ONS	756426-58-1	ND	1.52	5.06	10.1		B9K0107	15-Nov-19	0.247 L	04-Dec-19 18:17	1
11CI-PF3OUdS	763051-92-9	ND	1.52	5.06	10.1		B9K0107	15-Nov-19	0.247 L	04-Dec-19 18:17	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	98.8	70 - 130			B9K0107	15-Nov-19	0.247 L	04-Dec-19 18:17	1	
13C2-PFDA	SURR	88.8	70 - 130			B9K0107	15-Nov-19	0.247 L	04-Dec-19 18:17	1	
d5-EtFOSAA	SURR	95.4	70 - 130			B9K0107	15-Nov-19	0.247 L	04-Dec-19 18:17	1	
13C3-HFPO-DA	SURR	93.3	70 - 130			B9K0107	15-Nov-19	0.247 L	04-Dec-19 18:17	1	

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL

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

new 11/16/20

Sample ID: WI-CV-3RW18P-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903978-06	Column:	BEH C18
Project:	9000NVT3	Date Collected:	08-Nov-19 08:15	Date Received:	12-Nov-19 10:00		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.52	5.08	10.2		B9K0107	15-Nov-19	0.246 L	04-Dec-19 18:28	1
PFHxA	307-24-4	ND	1.52	5.08	10.2		B9K0107	15-Nov-19	0.246 L	04-Dec-19 18:28	1
PFHpA	375-85-9	ND	1.52	5.08	10.2		B9K0107	15-Nov-19	0.246 L	04-Dec-19 18:28	1
PFHxS	355-46-4	ND	1.52	5.08	10.2		B9K0107	15-Nov-19	0.246 L	04-Dec-19 18:28	1
PFOA	335-67-1	ND	1.52	5.08	10.2		B9K0107	15-Nov-19	0.246 L	04-Dec-19 18:28	1
PFNA	375-95-1	ND	1.52	5.08	10.2		B9K0107	15-Nov-19	0.246 L	04-Dec-19 18:28	1
PFOS	1763-23-1	ND	1.52	7.11	10.2		B9K0107	15-Nov-19	0.246 L	04-Dec-19 18:28	1
PFDA	335-76-2	ND	1.52	5.08	10.2		B9K0107	15-Nov-19	0.246 L	04-Dec-19 18:28	1
MeFOSAA	2355-31-9	ND	1.52	5.08	10.2		B9K0107	15-Nov-19	0.246 L	04-Dec-19 18:28	1
EtFOSAA	2991-50-6	ND	1.52	5.08	10.2		B9K0107	15-Nov-19	0.246 L	04-Dec-19 18:28	1
PFUnA	2058-94-8	ND	1.52	5.08	10.2		B9K0107	15-Nov-19	0.246 L	04-Dec-19 18:28	1
PFDoA	307-55-1	ND	1.52	5.08	10.2		B9K0107	15-Nov-19	0.246 L	04-Dec-19 18:28	1
PFTTrDA	72629-94-8	ND	1.52	5.08	10.2		B9K0107	15-Nov-19	0.246 L	04-Dec-19 18:28	1
PFTeDA	376-06-7	ND	1.52	5.08	10.2		B9K0107	15-Nov-19	0.246 L	04-Dec-19 18:28	1
HFPO-DA	13252-13-6	ND	1.52	5.08	10.2		B9K0107	15-Nov-19	0.246 L	04-Dec-19 18:28	1
ADONA	919005-14-4	ND	1.52	5.08	10.2		B9K0107	15-Nov-19	0.246 L	04-Dec-19 18:28	1
9CI-PF3ONS	756426-58-1	ND	1.52	5.08	10.2		B9K0107	15-Nov-19	0.246 L	04-Dec-19 18:28	1
11CI-PF3OUdS	763051-92-9	ND	1.52	5.08	10.2		B9K0107	15-Nov-19	0.246 L	04-Dec-19 18:28	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	103	70 - 130			B9K0107	15-Nov-19	0.246 L	04-Dec-19 18:28	1	
13C2-PFDA	SURR	96.0	70 - 130			B9K0107	15-Nov-19	0.246 L	04-Dec-19 18:28	1	
d5-EtFOSAA	SURR	90.8	70 - 130			B9K0107	15-Nov-19	0.246 L	04-Dec-19 18:28	1	
13C3-HFPO-DA	SURR	99.3	70 - 130			B9K0107	15-Nov-19	0.246 L	04-Dec-19 18:28	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw.11.4/20

Sample ID: WI-CV-3FB18-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903978-07	Column:	BEH C18
Project:	9000NVT3	Date Collected:	08-Nov-19 08:10	Date Received:	12-Nov-19 10:00		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.48	4.92	9.86		B9K0107	15-Nov-19	0.254 L	25-Nov-19 13:00	1
PFHxA	307-24-4	ND	1.48	4.92	9.86		B9K0107	15-Nov-19	0.254 L	25-Nov-19 13:00	1
PFHpA	375-85-9	ND	1.48	4.92	9.86		B9K0107	15-Nov-19	0.254 L	25-Nov-19 13:00	1
PFHxS	355-46-4	ND	1.48	4.92	9.86		B9K0107	15-Nov-19	0.254 L	25-Nov-19 13:00	1
PFOA	335-67-1	ND	1.48	4.92	9.86		B9K0107	15-Nov-19	0.254 L	25-Nov-19 13:00	1
PFNA	375-95-1	ND	1.48	4.92	9.86		B9K0107	15-Nov-19	0.254 L	25-Nov-19 13:00	1
PFOS	1763-23-1	ND	1.48	6.89	9.86		B9K0107	15-Nov-19	0.254 L	25-Nov-19 13:00	1
PFDA	335-76-2	ND	1.48	4.92	9.86		B9K0107	15-Nov-19	0.254 L	25-Nov-19 13:00	1
MeFOSAA	2355-31-9	ND	1.48	4.92	9.86		B9K0107	15-Nov-19	0.254 L	25-Nov-19 13:00	1
EtFOSAA	2991-50-6	ND	1.48	4.92	9.86		B9K0107	15-Nov-19	0.254 L	25-Nov-19 13:00	1
PFUnA	2058-94-8	ND	1.48	4.92	9.86		B9K0107	15-Nov-19	0.254 L	25-Nov-19 13:00	1
PFDoA	307-55-1	ND	1.48	4.92	9.86		B9K0107	15-Nov-19	0.254 L	25-Nov-19 13:00	1
PFTTrDA	72629-94-8	ND	1.48	4.92	9.86		B9K0107	15-Nov-19	0.254 L	25-Nov-19 13:00	1
PFTeDA	376-06-7	ND	1.48	4.92	9.86		B9K0107	15-Nov-19	0.254 L	25-Nov-19 13:00	1
HFPO-DA	13252-13-6	ND	1.48	4.92	9.86		B9K0107	15-Nov-19	0.254 L	25-Nov-19 13:00	1
ADONA	919005-14-4	ND	1.48	4.92	9.86		B9K0107	15-Nov-19	0.254 L	25-Nov-19 13:00	1
9CI-PF3ONS	756426-58-1	ND	1.48	4.92	9.86		B9K0107	15-Nov-19	0.254 L	25-Nov-19 13:00	1
11CI-PF3OUdS	763051-92-9	ND	1.48	4.92	9.86		B9K0107	15-Nov-19	0.254 L	25-Nov-19 13:00	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	111	70 - 130			B9K0107	15-Nov-19	0.254 L	25-Nov-19 13:00	1	
13C2-PFDA	SURR	118	70 - 130			B9K0107	15-Nov-19	0.254 L	25-Nov-19 13:00	1	
d5-EtFOSAA	SURR	110	70 - 130			B9K0107	15-Nov-19	0.254 L	25-Nov-19 13:00	1	
13C3-HFPO-DA	SURR	111	70 - 130			B9K0107	15-Nov-19	0.254 L	25-Nov-19 13:00	1	

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

new 11/12/20

Sample ID: WI-CV-1RW20-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903978-08	Column:	BEH C18
Project:	9000NVT3	Date Collected:	08-Nov-19 09:15	Date Received:	12-Nov-19 10:00		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.50	5.00	10.0		B9K0107	15-Nov-19	0.250 L	25-Nov-19 13:11	1
PFHxA	307-24-4	ND	1.50	5.00	10.0		B9K0107	15-Nov-19	0.250 L	25-Nov-19 13:11	1
PFHpA	375-85-9	ND	1.50	5.00	10.0		B9K0107	15-Nov-19	0.250 L	25-Nov-19 13:11	1
PFHxS	355-46-4	ND	1.50	5.00	10.0		B9K0107	15-Nov-19	0.250 L	25-Nov-19 13:11	1
PFOA	335-67-1	ND	1.50	5.00	10.0		B9K0107	15-Nov-19	0.250 L	25-Nov-19 13:11	1
PFNA	375-95-1	ND	1.50	5.00	10.0		B9K0107	15-Nov-19	0.250 L	25-Nov-19 13:11	1
PFOS	1763-23-1	ND	1.50	7.00	10.0		B9K0107	15-Nov-19	0.250 L	25-Nov-19 13:11	1
PFDA	335-76-2	ND	1.50	5.00	10.0		B9K0107	15-Nov-19	0.250 L	25-Nov-19 13:11	1
MeFOSAA	2355-31-9	ND	1.50	5.00	10.0		B9K0107	15-Nov-19	0.250 L	25-Nov-19 13:11	1
EtFOSAA	2991-50-6	ND	1.50	5.00	10.0		B9K0107	15-Nov-19	0.250 L	25-Nov-19 13:11	1
PFUnA	2058-94-8	ND	1.50	5.00	10.0		B9K0107	15-Nov-19	0.250 L	25-Nov-19 13:11	1
PFDoA	307-55-1	ND	1.50	5.00	10.0		B9K0107	15-Nov-19	0.250 L	25-Nov-19 13:11	1
PFTTrDA	72629-94-8	ND	1.50	5.00	10.0		B9K0107	15-Nov-19	0.250 L	25-Nov-19 13:11	1
PFTeDA	376-06-7	ND	1.50	5.00	10.0		B9K0107	15-Nov-19	0.250 L	25-Nov-19 13:11	1
HFPO-DA	13252-13-6	ND	1.50	5.00	10.0		B9K0107	15-Nov-19	0.250 L	25-Nov-19 13:11	1
ADONA	919005-14-4	ND	1.50	5.00	10.0		B9K0107	15-Nov-19	0.250 L	25-Nov-19 13:11	1
9Cl-PF3ONS	756426-58-1	ND	1.50	5.00	10.0		B9K0107	15-Nov-19	0.250 L	25-Nov-19 13:11	1
11Cl-PF3OUdS	763051-92-9	ND	1.50	5.00	10.0		B9K0107	15-Nov-19	0.250 L	25-Nov-19 13:11	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	108	70 - 130			B9K0107	15-Nov-19	0.250 L	25-Nov-19 13:11	1	
13C2-PFDA	SURR	116	70 - 130			B9K0107	15-Nov-19	0.250 L	25-Nov-19 13:11	1	
d5-EtFOSAA	SURR	100	70 - 130			B9K0107	15-Nov-19	0.250 L	25-Nov-19 13:11	1	
13C3-HFPO-DA	SURR	106	70 - 130			B9K0107	15-Nov-19	0.250 L	25-Nov-19 13:11	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

new 11/14/20

Sample ID: WI-CV-1FB20-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903978-09	Column:	BEH C18
Project:	9000NVT3	Date Collected:	08-Nov-19 09:15	Date Received:	12-Nov-19 10:00		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.47	4.88	9.78		B9K0107	15-Nov-19	0.256 L	25-Nov-19 13:22	1
PFHxA	307-24-4	ND	1.47	4.88	9.78		B9K0107	15-Nov-19	0.256 L	25-Nov-19 13:22	1
PFHpA	375-85-9	ND	1.47	4.88	9.78		B9K0107	15-Nov-19	0.256 L	25-Nov-19 13:22	1
PFHxS	355-46-4	ND	1.47	4.88	9.78		B9K0107	15-Nov-19	0.256 L	25-Nov-19 13:22	1
PFOA	335-67-1	ND	1.47	4.88	9.78		B9K0107	15-Nov-19	0.256 L	25-Nov-19 13:22	1
PFNA	375-95-1	ND	1.47	4.88	9.78		B9K0107	15-Nov-19	0.256 L	25-Nov-19 13:22	1
PFOS	1763-23-1	ND	1.47	6.84	9.78		B9K0107	15-Nov-19	0.256 L	25-Nov-19 13:22	1
PFDA	335-76-2	ND	1.47	4.88	9.78		B9K0107	15-Nov-19	0.256 L	25-Nov-19 13:22	1
MeFOSAA	2355-31-9	ND	1.47	4.88	9.78		B9K0107	15-Nov-19	0.256 L	25-Nov-19 13:22	1
EtFOSAA	2991-50-6	ND	1.47	4.88	9.78		B9K0107	15-Nov-19	0.256 L	25-Nov-19 13:22	1
PFUnA	2058-94-8	ND	1.47	4.88	9.78		B9K0107	15-Nov-19	0.256 L	25-Nov-19 13:22	1
PFDoA	307-55-1	ND	1.47	4.88	9.78		B9K0107	15-Nov-19	0.256 L	25-Nov-19 13:22	1
PFTTrDA	72629-94-8	ND	1.47	4.88	9.78		B9K0107	15-Nov-19	0.256 L	25-Nov-19 13:22	1
PFTeDA	376-06-7	ND	1.47	4.88	9.78		B9K0107	15-Nov-19	0.256 L	25-Nov-19 13:22	1
HFPO-DA	13252-13-6	ND	1.47	4.88	9.78		B9K0107	15-Nov-19	0.256 L	25-Nov-19 13:22	1
ADONA	919005-14-4	ND	1.47	4.88	9.78		B9K0107	15-Nov-19	0.256 L	25-Nov-19 13:22	1
9CI-PF3ONS	756426-58-1	ND	1.47	4.88	9.78		B9K0107	15-Nov-19	0.256 L	25-Nov-19 13:22	1
11CI-PF3OUdS	763051-92-9	ND	1.47	4.88	9.78		B9K0107	15-Nov-19	0.256 L	25-Nov-19 13:22	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	108	70 - 130			B9K0107	15-Nov-19	0.256 L	25-Nov-19 13:22	1	
13C2-PFDA	SURR	121	70 - 130			B9K0107	15-Nov-19	0.256 L	25-Nov-19 13:22	1	
d5-EtFOSAA	SURR	108	70 - 130			B9K0107	15-Nov-19	0.256 L	25-Nov-19 13:22	1	
13C3-HFPO-DA	SURR	109	70 - 130			B9K0107	15-Nov-19	0.256 L	25-Nov-19 13:22	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

new 11/16/20

Sample ID: WI-CV-1RW67-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903978-10	Column:	BEH C18
Project:	9000NVT3	Date Collected:	08-Nov-19 10:10	Date Received:	12-Nov-19 10:00		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.48	4.94	9.87		B9K0107	15-Nov-19	0.253 L	06-Dec-19 18:05	1
PFHxA	307-24-4	ND	1.48	4.94	9.87		B9K0107	15-Nov-19	0.253 L	06-Dec-19 18:05	1
PFHpA	375-85-9	ND	1.48	4.94	9.87		B9K0107	15-Nov-19	0.253 L	06-Dec-19 18:05	1
PFHxS	355-46-4	ND	1.48	4.94	9.87		B9K0107	15-Nov-19	0.253 L	06-Dec-19 18:05	1
PFOA	335-67-1	ND	1.48	4.94	9.87		B9K0107	15-Nov-19	0.253 L	06-Dec-19 18:05	1
PFNA	375-95-1	ND	1.48	4.94	9.87		B9K0107	15-Nov-19	0.253 L	06-Dec-19 18:05	1
PFOS	1763-23-1	ND	1.48	6.92	9.87		B9K0107	15-Nov-19	0.253 L	06-Dec-19 18:05	1
PFDA	335-76-2	ND	1.48	4.94	9.87		B9K0107	15-Nov-19	0.253 L	06-Dec-19 18:05	1
MeFOSAA	2355-31-9	ND	1.48	4.94	9.87		B9K0107	15-Nov-19	0.253 L	06-Dec-19 18:05	1
EtFOSAA	2991-50-6	ND	1.48	4.94	9.87		B9K0107	15-Nov-19	0.253 L	06-Dec-19 18:05	1
PFUnA	2058-94-8	ND	1.48	4.94	9.87		B9K0107	15-Nov-19	0.253 L	06-Dec-19 18:05	1
PFDoA	307-55-1	ND	1.48	4.94	9.87		B9K0107	15-Nov-19	0.253 L	06-Dec-19 18:05	1
PFTTrDA	72629-94-8	ND	1.48	4.94	9.87		B9K0107	15-Nov-19	0.253 L	06-Dec-19 18:05	1
PFTeDA	376-06-7	ND	1.48	4.94	9.87		B9K0107	15-Nov-19	0.253 L	06-Dec-19 18:05	1
HFPO-DA	13252-13-6	ND	1.48	4.94	9.87		B9K0107	15-Nov-19	0.253 L	06-Dec-19 18:05	1
ADONA	919005-14-4	ND	1.48	4.94	9.87		B9K0107	15-Nov-19	0.253 L	06-Dec-19 18:05	1
9CI-PF3ONS	756426-58-1	ND	1.48	4.94	9.87		B9K0107	15-Nov-19	0.253 L	06-Dec-19 18:05	1
11CI-PF3OUdS	763051-92-9	ND	1.48	4.94	9.87		B9K0107	15-Nov-19	0.253 L	06-Dec-19 18:05	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	91.5	70 - 130			B9K0107	15-Nov-19	0.253 L	06-Dec-19 18:05	1	
13C2-PFDA	SURR	86.3	70 - 130			B9K0107	15-Nov-19	0.253 L	06-Dec-19 18:05	1	
d5-EtFOSAA	SURR	70.1	70 - 130			B9K0107	15-Nov-19	0.253 L	06-Dec-19 18:05	1	
13C3-HFPO-DA	SURR	88.4	70 - 130			B9K0107	15-Nov-19	0.253 L	06-Dec-19 18:05	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

new 11/16/20

Sample ID: WI-CV-1FB67-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1903978-11	Column:	BEH C18
Project:	9000NVT3	Date Collected:	08-Nov-19 10:10	Date Received:	12-Nov-19 10:00		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.51	5.02	10.0		B9K0107	15-Nov-19	0.249 L	25-Nov-19 13:44	1
PFHxA	307-24-4	ND	1.51	5.02	10.0		B9K0107	15-Nov-19	0.249 L	25-Nov-19 13:44	1
PFHpA	375-85-9	ND	1.51	5.02	10.0		B9K0107	15-Nov-19	0.249 L	25-Nov-19 13:44	1
PFHxS	355-46-4	ND	1.51	5.02	10.0		B9K0107	15-Nov-19	0.249 L	25-Nov-19 13:44	1
PFOA	335-67-1	ND	1.51	5.02	10.0		B9K0107	15-Nov-19	0.249 L	25-Nov-19 13:44	1
PFNA	375-95-1	ND	1.51	5.02	10.0		B9K0107	15-Nov-19	0.249 L	25-Nov-19 13:44	1
PFOS	1763-23-1	ND	1.51	7.03	10.0		B9K0107	15-Nov-19	0.249 L	25-Nov-19 13:44	1
PFDA	335-76-2	ND	1.51	5.02	10.0		B9K0107	15-Nov-19	0.249 L	25-Nov-19 13:44	1
MeFOSAA	2355-31-9	ND	1.51	5.02	10.0		B9K0107	15-Nov-19	0.249 L	25-Nov-19 13:44	1
EtFOSAA	2991-50-6	ND	1.51	5.02	10.0		B9K0107	15-Nov-19	0.249 L	25-Nov-19 13:44	1
PFUnA	2058-94-8	ND	1.51	5.02	10.0		B9K0107	15-Nov-19	0.249 L	25-Nov-19 13:44	1
PFDoA	307-55-1	ND	1.51	5.02	10.0		B9K0107	15-Nov-19	0.249 L	25-Nov-19 13:44	1
PFTTrDA	72629-94-8	ND	1.51	5.02	10.0		B9K0107	15-Nov-19	0.249 L	25-Nov-19 13:44	1
PFTeDA	376-06-7	ND	1.51	5.02	10.0		B9K0107	15-Nov-19	0.249 L	25-Nov-19 13:44	1
HFPO-DA	13252-13-6	ND	1.51	5.02	10.0		B9K0107	15-Nov-19	0.249 L	25-Nov-19 13:44	1
ADONA	919005-14-4	ND	1.51	5.02	10.0		B9K0107	15-Nov-19	0.249 L	25-Nov-19 13:44	1
9CI-PF3ONS	756426-58-1	ND	1.51	5.02	10.0		B9K0107	15-Nov-19	0.249 L	25-Nov-19 13:44	1
11CI-PF3OUdS	763051-92-9	ND	1.51	5.02	10.0		B9K0107	15-Nov-19	0.249 L	25-Nov-19 13:44	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	103	70 - 130			B9K0107	15-Nov-19	0.249 L	25-Nov-19 13:44	1	
13C2-PFDA	SURR	116	70 - 130			B9K0107	15-Nov-19	0.249 L	25-Nov-19 13:44	1	
d5-EtFOSAA	SURR	90.2	70 - 130			B9K0107	15-Nov-19	0.249 L	25-Nov-19 13:44	1	
13C3-HFPO-DA	SURR	101	70 - 130			B9K0107	15-Nov-19	0.249 L	25-Nov-19 13:44	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 1/16/20

**DATA VALIDATION SUMMARY REPORT
NAS WHIDBEY ISLAND, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon
SDG: 1904084
Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
Site: NAS Whidbey Island, Residential Wells, CTO-4470, Washington
Date: January 16, 2020

PFAS			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-CV-1RW90-1119	1904084-01	Water
2	WI-CV-1FB90-1119	1904084-02	Water

A full data validation was performed on the analytical data for one water sample and one aqueous field blank sample collected on November 20, 2019 by CH2M Hill at the NAS Whidbey Island site in Washington. The samples were analyzed under the EPA Method "Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)".

Specific method references are as follows:

Analysis
PFAS

Method References
USEPA Method 537.1

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, DoD Final General Data Validation Guidelines, November 2019, and the USEPA Data Review and Validation Guidelines as follows:

- The USEPA "Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537," November 2018;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate Spike recoveries

- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 10% of the detected results in the samples.

Data Usability Assessment

There were no serious deficiencies of data.

Overall the data are acceptable for the intended purposes. There were no qualifications.

Perfluorinated Alkyl Substances (PFAS)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC sample results are summarized in the table below.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WI-CV-1FB90-1119	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- MS/MSD samples were not analyzed.

Laboratory Control Samples (LCS)

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- All criteria were met.

Field Duplicate Sample Precision

- Field duplicate samples were not collected.

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed: Nancy Weaver Dated: 1/19/20
Nancy Weaver
Senior Chemist

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

Sample ID: WI-CV-1RW90-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1904084-01	Column:	BEH C18
Project:	9000NVT3	Date Collected:	20-Nov-19 12:00	Date Received:	21-Nov-19 09:06		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	34.9	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:05	1
PFHxA	307-24-4	47.7	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:05	1
PFHpA	375-85-9	20.2	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:05	1
PFHxS	355-46-4	230	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:05	1
PFOA	335-67-1	176	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:05	1
PFNA	375-95-1	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:05	1
PFOS	1763-23-1	9.01	1.50	7.00	10.0	J	B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:05	1
PFDA	335-76-2	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:05	1
MeFOSAA	2355-31-9	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:05	1
EtFOSAA	2991-50-6	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:05	1
PFUnA	2058-94-8	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:05	1
PFDoA	307-55-1	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:05	1
PFTTrDA	72629-94-8	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:05	1
PFTeDA	376-06-7	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:05	1
HFPO-DA	13252-13-6	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:05	1
ADONA	919005-14-4	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:05	1
9CI-PF3ONS	756426-58-1	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:05	1
11CI-PF3OUdS	763051-92-9	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:05	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	98.0	70 - 130		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:05	1
13C2-PFDA	SURR	89.1	70 - 130		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:05	1
d5-EtFOSAA	SURR	89.6	70 - 130		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:05	1
13C3-HFPO-DA	SURR	91.8	70 - 130		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:05	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 1/16/20

Sample ID: WI-CV-1FB90-1119

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1904084-02	Column:	BEH C18
Project:	9000NVT3	Date Collected:	20-Nov-19 11:55	Date Received:	21-Nov-19 09:06		
Location:	Field Reagent Blank						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:16	1
PFHxA	307-24-4	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:16	1
PFHpA	375-85-9	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:16	1
PFHxS	355-46-4	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:16	1
PFOA	335-67-1	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:16	1
PFNA	375-95-1	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:16	1
PFOS	1763-23-1	ND	1.50	7.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:16	1
PFDA	335-76-2	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:16	1
MeFOSAA	2355-31-9	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:16	1
EtFOSAA	2991-50-6	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:16	1
PFUnA	2058-94-8	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:16	1
PFDoA	307-55-1	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:16	1
PFTTrDA	72629-94-8	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:16	1
PFTeDA	376-06-7	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:16	1
HFPO-DA	13252-13-6	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:16	1
ADONA	919005-14-4	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:16	1
9Cl-PF3ONS	756426-58-1	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:16	1
11Cl-PF3OUdS	763051-92-9	ND	1.50	5.00	10.0		B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:16	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	105	70 - 130			B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:16	1	
13C2-PFDA	SURR	104	70 - 130			B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:16	1	
d5-EtFOSAA	SURR	96.4	70 - 130			B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:16	1	
13C3-HFPO-DA	SURR	98.9	70 - 130			B9K0216	25-Nov-19	0.250 L	04-Dec-19 02:16	1	

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

NW 11/16/20

**DATA VALIDATION SUMMARY REPORT
NAS WHIDBEY ISLAND, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon
 SDG: 1904368
 Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
 Site: NAS Whidbey Island, Residential Wells, CTO-4470, Washington
 Date: January 6, 2020

PFAS			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-CV-1RW07-1219	1904368-01	Water
1MS	WI-CV-1RW07-1219MS	1904368-01MS	Water
1MSD	WI-CV-1RW07-1219MSD	1904368-01MSD	Water
2	WI-CV-1FB07-1219	1904368-02	Water

A full data validation was performed on the analytical data for one water sample and one aqueous field blank sample collected on December 18, 2019 by CH2M Hill at the NAS Whidbey Island site in Washington. The samples were analyzed under the EPA Method “Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)”.

Specific method references are as follows:

Analysis
PFAS

Method References
USEPA Method 537.1

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, DoD Final General Data Validation Guidelines, November 2019, and the USEPA Data Review and Validation Guidelines as follows:

- The USEPA “Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537,” November 2018;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries

- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 10% of the detected results in the samples.

Data Usability Assessment

There were no serious deficiencies of data.

Overall the data are acceptable for the intended purposes as qualified for the deficiencies detailed in this report.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contaminations and actions from other exceedances of QC criteria.

Perfluorinated Alkyl Substances (PFAS)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC sample results are summarized in the table below.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WI-CV-1FB07-1219	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD samples exhibited acceptable percent recoveries (%R) and RPD values except for the following.

MS/MSD Sample ID	Compound	MS %R/MSD %R/ RPD	Qualifier
1	PFHxA	138%/OK/OK	J
	PFHpA	134%/OK/OK	
	PFOA	141%/OK/33.1	
	PFDA	133%/OK/OK	None - Sample ND

Laboratory Control Samples (LCS)

- The LCS samples exhibited acceptable percent recoveries (%R).

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- All criteria were met.

Field Duplicate Sample Precision

- Field duplicate samples were not collected.

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed: Nancy Weaver Dated: 1/19/20
Nancy Weaver
Senior Chemist

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

Sample ID: WI-CV-1RW07-1219

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1904368-01	Column:	BEH C18
Project:	NASWI Off-Base Drinking Water Sampling	Date Collected:	18-Dec-19 09:00	Date Received:	19-Dec-19 10:23		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	22.5	1.47	4.88	9.78		B9L0217	30-Dec-19	0.256 L	04-Jan-20 07:50	1
PFHxA	307-24-4	52.5 J	1.47	4.88	9.78		B9L0217	30-Dec-19	0.256 L	04-Jan-20 07:50	1
PFHpA	375-85-9	13.3 J	1.47	4.88	9.78		B9L0217	30-Dec-19	0.256 L	04-Jan-20 07:50	1
PFHxS	355-46-4	66.5	1.47	4.88	9.78		B9L0217	30-Dec-19	0.256 L	04-Jan-20 07:50	1
PFOA	335-67-1	150 J	1.47	4.88	9.78		B9L0217	30-Dec-19	0.256 L	04-Jan-20 07:50	1
PFNA	375-95-1	ND	1.47	4.88	9.78		B9L0217	30-Dec-19	0.256 L	04-Jan-20 07:50	1
PFOS	1763-23-1	ND	1.47	4.88	9.78		B9L0217	30-Dec-19	0.256 L	04-Jan-20 07:50	1
PFDA	335-76-2	ND	1.47	4.88	9.78		B9L0217	30-Dec-19	0.256 L	04-Jan-20 07:50	1
MeFOSAA	2355-31-9	ND	1.47	4.88	9.78		B9L0217	30-Dec-19	0.256 L	04-Jan-20 07:50	1
EtFOSAA	2991-50-6	ND	1.47	4.88	9.78		B9L0217	30-Dec-19	0.256 L	04-Jan-20 07:50	1
PFUnA	2058-94-8	ND	1.47	4.88	9.78		B9L0217	30-Dec-19	0.256 L	04-Jan-20 07:50	1
PFDoA	307-55-1	ND	1.47	4.88	9.78		B9L0217	30-Dec-19	0.256 L	04-Jan-20 07:50	1
PFTTrDA	72629-94-8	ND	1.47	4.88	9.78		B9L0217	30-Dec-19	0.256 L	04-Jan-20 07:50	1
PFTeDA	376-06-7	ND	1.47	4.88	9.78		B9L0217	30-Dec-19	0.256 L	04-Jan-20 07:50	1
HFPO-DA	13252-13-6	ND	1.47	4.88	9.78		B9L0217	30-Dec-19	0.256 L	04-Jan-20 07:50	1
ADONA	919005-14-4	ND	1.47	4.88	9.78		B9L0217	30-Dec-19	0.256 L	04-Jan-20 07:50	1
9CI-PF3ONS	756426-58-1	ND	1.47	4.88	9.78		B9L0217	30-Dec-19	0.256 L	04-Jan-20 07:50	1
11CI-PF3OUdS	763051-92-9	ND	1.47	4.88	9.78		B9L0217	30-Dec-19	0.256 L	04-Jan-20 07:50	1

MSH
MSH
MSH

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130		B9L0217	30-Dec-19	0.256 L	04-Jan-20 07:50	1
13C2-PFDA	SURR	99.6	70 - 130		B9L0217	30-Dec-19	0.256 L	04-Jan-20 07:50	1
d5-EtFOSAA	SURR	102	70 - 130		B9L0217	30-Dec-19	0.256 L	04-Jan-20 07:50	1
13C3-HFPO-DA	SURR	106	70 - 130		B9L0217	30-Dec-19	0.256 L	04-Jan-20 07:50	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

12/16/20

Sample ID: WI-CV-1FB07-1219

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1904368-02	Column:	BEH C18
Project:	NASWI Off-Base Drinking Water Sampling	Date Collected:	18-Dec-19 09:00	Date Received:	19-Dec-19 10:23		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.46	4.86	9.73		B9L0217	30-Dec-19	0.257 L	31-Dec-19 20:04	1
PFHxA	307-24-4	ND	1.46	4.86	9.73		B9L0217	30-Dec-19	0.257 L	31-Dec-19 20:04	1
PFHpA	375-85-9	ND	1.46	4.86	9.73		B9L0217	30-Dec-19	0.257 L	31-Dec-19 20:04	1
PFHxS	355-46-4	ND	1.46	4.86	9.73		B9L0217	30-Dec-19	0.257 L	31-Dec-19 20:04	1
PFOA	335-67-1	ND	1.46	4.86	9.73		B9L0217	30-Dec-19	0.257 L	31-Dec-19 20:04	1
PFNA	375-95-1	ND	1.46	4.86	9.73		B9L0217	30-Dec-19	0.257 L	31-Dec-19 20:04	1
PFOS	1763-23-1	ND	1.46	4.86	9.73		B9L0217	30-Dec-19	0.257 L	31-Dec-19 20:04	1
PFDA	335-76-2	ND	1.46	4.86	9.73		B9L0217	30-Dec-19	0.257 L	31-Dec-19 20:04	1
MeFOSAA	2355-31-9	ND	1.46	4.86	9.73		B9L0217	30-Dec-19	0.257 L	31-Dec-19 20:04	1
EtFOSAA	2991-50-6	ND	1.46	4.86	9.73		B9L0217	30-Dec-19	0.257 L	31-Dec-19 20:04	1
PFUnA	2058-94-8	ND	1.46	4.86	9.73		B9L0217	30-Dec-19	0.257 L	31-Dec-19 20:04	1
PFDoA	307-55-1	ND	1.46	4.86	9.73		B9L0217	30-Dec-19	0.257 L	31-Dec-19 20:04	1
PFTTrDA	72629-94-8	ND	1.46	4.86	9.73		B9L0217	30-Dec-19	0.257 L	31-Dec-19 20:04	1
PFTeDA	376-06-7	ND	1.46	4.86	9.73		B9L0217	30-Dec-19	0.257 L	31-Dec-19 20:04	1
HFPO-DA	13252-13-6	ND	1.46	4.86	9.73		B9L0217	30-Dec-19	0.257 L	31-Dec-19 20:04	1
ADONA	919005-14-4	ND	1.46	4.86	9.73		B9L0217	30-Dec-19	0.257 L	31-Dec-19 20:04	1
9CI-PF3ONS	756426-58-1	ND	1.46	4.86	9.73		B9L0217	30-Dec-19	0.257 L	31-Dec-19 20:04	1
11CI-PF3OUdS	763051-92-9	ND	1.46	4.86	9.73		B9L0217	30-Dec-19	0.257 L	31-Dec-19 20:04	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	116	70 - 130			B9L0217	30-Dec-19	0.257 L	31-Dec-19 20:04	1	
13C2-PFDA	SURR	129	70 - 130			B9L0217	30-Dec-19	0.257 L	31-Dec-19 20:04	1	
d5-EtFOSAA	SURR	94.2	70 - 130			B9L0217	30-Dec-19	0.257 L	31-Dec-19 20:04	1	
13C3-HFPO-DA	SURR	120	70 - 130			B9L0217	30-Dec-19	0.257 L	31-Dec-19 20:04	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL

LOQ - Limit of quantitation

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

mw 1/16/20

**DATA VALIDATION SUMMARY REPORT
NAS WHIDBEY ISLAND, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon
 SDG: 2000099
 Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
 Site: NAS Whidbey Island, Residential Wells, CTO-4470, Washington
 Date: February 7, 2020

PFAS			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-AF-1RW104-0120	2000099-01	Water
1MS	WI-AF-1RW104-0120MS	2000099-01MS	Water
1MSD	WI-AF-1RW104-0120MSD	2000099-01MSD	Water
2	WI-AF-1RW104P-0120	2000099-02	Water
3	WI-AF-1FB104-0120	2000099-03	Water

A full data validation was performed on the analytical data for two water samples and one aqueous field blank sample collected on January 16, 2020 by CH2M Hill at the NAS Whidbey Island site in Washington. The samples were analyzed under the EPA Method “Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)”.

Specific method references are as follows:

Analysis
PFAS

Method References
USEPA Method 537.1

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, DoD Final General Data Validation Guidelines, November 2019, and the USEPA Data Review and Validation Guidelines as follows:

- The USEPA “Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537,” November 2018;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning

- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 10% of the detected results in the samples.

Data Usability Assessment

There were no serious deficiencies of data.

Overall the data are acceptable for the intended purposes. There were no qualifications.

Perfluorinated Alkyl Substances (PFAS)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field blank sample WI-AF-1FB104-0120 was non-detect.

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD samples exhibited acceptable percent recoveries (%R) and RPD values.

Laboratory Control Samples (LCS)

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- All criteria were met.

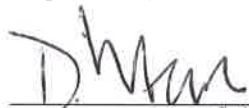
Field Duplicate Sample Precision

- Field duplicate results are summarized below. The precision was acceptable.

Compound	WI-AF-1RW104-0120 ng/L	WI-AF-1RW104P-0120 ng/L	RPD	Qualifier
None	ND	ND	-	-

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed:



Nancy Weaver
Senior Chemist

Dated:

2/7/20

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

Sample ID: WI-AF-1RW104-0120

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2000099-01	Column:	BEH C18
Project:	NASWI Off-Base DW Sampling	Date Collected:	16-Jan-20 11:40	Date Received:	17-Jan-20 08:40		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.56	5.21	10.4		B0A0128	23-Jan-20	0.240 L	27-Jan-20 12:39	1
PFHxA	307-24-4	ND	1.56	5.21	10.4		B0A0128	23-Jan-20	0.240 L	27-Jan-20 12:39	1
PFHpA	375-85-9	ND	1.56	5.21	10.4		B0A0128	23-Jan-20	0.240 L	27-Jan-20 12:39	1
PFHxS	355-46-4	ND	1.56	5.21	10.4		B0A0128	23-Jan-20	0.240 L	27-Jan-20 12:39	1
PFOA	335-67-1	ND	1.56	5.21	10.4		B0A0128	23-Jan-20	0.240 L	27-Jan-20 12:39	1
PFNA	375-95-1	ND	1.56	5.21	10.4		B0A0128	23-Jan-20	0.240 L	27-Jan-20 12:39	1
PFOS	1763-23-1	ND	1.56	5.21	10.4		B0A0128	23-Jan-20	0.240 L	27-Jan-20 12:39	1
PFDA	335-76-2	ND	1.56	5.21	10.4		B0A0128	23-Jan-20	0.240 L	27-Jan-20 12:39	1
MeFOSAA	2355-31-9	ND	1.56	5.21	10.4		B0A0128	23-Jan-20	0.240 L	27-Jan-20 12:39	1
EtFOSAA	2991-50-6	ND	1.56	5.21	10.4		B0A0128	23-Jan-20	0.240 L	27-Jan-20 12:39	1
PFUnA	2058-94-8	ND	1.56	5.21	10.4		B0A0128	23-Jan-20	0.240 L	27-Jan-20 12:39	1
PFDoA	307-55-1	ND	1.56	5.21	10.4		B0A0128	23-Jan-20	0.240 L	27-Jan-20 12:39	1
PFTTrDA	72629-94-8	ND	1.56	5.21	10.4		B0A0128	23-Jan-20	0.240 L	27-Jan-20 12:39	1
PFTeDA	376-06-7	ND	1.56	5.21	10.4		B0A0128	23-Jan-20	0.240 L	27-Jan-20 12:39	1
HFPO-DA	13252-13-6	ND	1.56	5.21	10.4		B0A0128	23-Jan-20	0.240 L	27-Jan-20 12:39	1
ADONA	919005-14-4	ND	1.56	5.21	10.4		B0A0128	23-Jan-20	0.240 L	27-Jan-20 12:39	1
9CI-PF3ONS	756426-58-1	ND	1.56	5.21	10.4		B0A0128	23-Jan-20	0.240 L	27-Jan-20 12:39	1
11CI-PF3OUdS	763051-92-9	ND	1.56	5.21	10.4		B0A0128	23-Jan-20	0.240 L	27-Jan-20 12:39	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	108	70 - 130			B0A0128	23-Jan-20	0.240 L	27-Jan-20 12:39	1	
13C2-PFDA	SURR	107	70 - 130			B0A0128	23-Jan-20	0.240 L	27-Jan-20 12:39	1	
d5-EtFOSAA	SURR	82.1	70 - 130			B0A0128	23-Jan-20	0.240 L	27-Jan-20 12:39	1	
13C3-HFPO-DA	SURR	99.3	70 - 130			B0A0128	23-Jan-20	0.240 L	27-Jan-20 12:39	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

1RW104/20

Sample ID: WI-AF-1RW104P-0120

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2000099-02	Column:	BEH C18
Project:	NASWI Off-Base DW Sampling	Date Collected:	16-Jan-20 11:45	Date Received:	17-Jan-20 08:40		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.48	4.94	9.88		B0A0128	23-Jan-20	0.253 L	27-Jan-20 12:50	1
PFHxA	307-24-4	ND	1.48	4.94	9.88		B0A0128	23-Jan-20	0.253 L	27-Jan-20 12:50	1
PFHpA	375-85-9	ND	1.48	4.94	9.88		B0A0128	23-Jan-20	0.253 L	27-Jan-20 12:50	1
PFHxS	355-46-4	ND	1.48	4.94	9.88		B0A0128	23-Jan-20	0.253 L	27-Jan-20 12:50	1
PFOA	335-67-1	ND	1.48	4.94	9.88		B0A0128	23-Jan-20	0.253 L	27-Jan-20 12:50	1
PFNA	375-95-1	ND	1.48	4.94	9.88		B0A0128	23-Jan-20	0.253 L	27-Jan-20 12:50	1
PFOS	1763-23-1	ND	1.48	4.94	9.88		B0A0128	23-Jan-20	0.253 L	27-Jan-20 12:50	1
PFDA	335-76-2	ND	1.48	4.94	9.88		B0A0128	23-Jan-20	0.253 L	27-Jan-20 12:50	1
MeFOSAA	2355-31-9	ND	1.48	4.94	9.88		B0A0128	23-Jan-20	0.253 L	27-Jan-20 12:50	1
EtFOSAA	2991-50-6	ND	1.48	4.94	9.88		B0A0128	23-Jan-20	0.253 L	27-Jan-20 12:50	1
PFUnA	2058-94-8	ND	1.48	4.94	9.88		B0A0128	23-Jan-20	0.253 L	27-Jan-20 12:50	1
PFDoA	307-55-1	ND	1.48	4.94	9.88		B0A0128	23-Jan-20	0.253 L	27-Jan-20 12:50	1
PFTrDA	72629-94-8	ND	1.48	4.94	9.88		B0A0128	23-Jan-20	0.253 L	27-Jan-20 12:50	1
PFTeDA	376-06-7	ND	1.48	4.94	9.88		B0A0128	23-Jan-20	0.253 L	27-Jan-20 12:50	1
HFPO-DA	13252-13-6	ND	1.48	4.94	9.88		B0A0128	23-Jan-20	0.253 L	27-Jan-20 12:50	1
ADONA	919005-14-4	ND	1.48	4.94	9.88		B0A0128	23-Jan-20	0.253 L	27-Jan-20 12:50	1
9CI-PF3ONS	756426-58-1	ND	1.48	4.94	9.88		B0A0128	23-Jan-20	0.253 L	27-Jan-20 12:50	1
11CI-PF3OUs	763051-92-9	ND	1.48	4.94	9.88		B0A0128	23-Jan-20	0.253 L	27-Jan-20 12:50	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	96.0	70 - 130			B0A0128	23-Jan-20	0.253 L	27-Jan-20 12:50	1	
13C2-PFDA	SURR	93.1	70 - 130			B0A0128	23-Jan-20	0.253 L	27-Jan-20 12:50	1	
d5-EtFOSAA	SURR	79.2	70 - 130			B0A0128	23-Jan-20	0.253 L	27-Jan-20 12:50	1	
13C3-HFPO-DA	SURR	87.8	70 - 130			B0A0128	23-Jan-20	0.253 L	27-Jan-20 12:50	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 2/7/20

Sample ID: WI-AF-1FB104-0120

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2000099-03	Column:	BEH C18
Project:	NASWI Off-Base DW Sampling	Date Collected:	16-Jan-20 11:40	Date Received:	17-Jan-20 08:40		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	1.45	4.84	9.69		B0A0128	23-Jan-20	0.258 L	27-Jan-20 13:01	1
PFHxA	307-24-4	ND	1.45	4.84	9.69		B0A0128	23-Jan-20	0.258 L	27-Jan-20 13:01	1
PFHpA	375-85-9	ND	1.45	4.84	9.69		B0A0128	23-Jan-20	0.258 L	27-Jan-20 13:01	1
PFHxS	355-46-4	ND	1.45	4.84	9.69		B0A0128	23-Jan-20	0.258 L	27-Jan-20 13:01	1
PFOA	335-67-1	ND	1.45	4.84	9.69		B0A0128	23-Jan-20	0.258 L	27-Jan-20 13:01	1
PFNA	375-95-1	ND	1.45	4.84	9.69		B0A0128	23-Jan-20	0.258 L	27-Jan-20 13:01	1
PFOS	1763-23-1	ND	1.45	4.84	9.69		B0A0128	23-Jan-20	0.258 L	27-Jan-20 13:01	1
PFDA	335-76-2	ND	1.45	4.84	9.69		B0A0128	23-Jan-20	0.258 L	27-Jan-20 13:01	1
MeFOSAA	2355-31-9	ND	1.45	4.84	9.69		B0A0128	23-Jan-20	0.258 L	27-Jan-20 13:01	1
EtFOSAA	2991-50-6	ND	1.45	4.84	9.69		B0A0128	23-Jan-20	0.258 L	27-Jan-20 13:01	1
PFUnA	2058-94-8	ND	1.45	4.84	9.69		B0A0128	23-Jan-20	0.258 L	27-Jan-20 13:01	1
PFDoA	307-55-1	ND	1.45	4.84	9.69		B0A0128	23-Jan-20	0.258 L	27-Jan-20 13:01	1
PFTTrDA	72629-94-8	ND	1.45	4.84	9.69		B0A0128	23-Jan-20	0.258 L	27-Jan-20 13:01	1
PFTeDA	376-06-7	ND	1.45	4.84	9.69		B0A0128	23-Jan-20	0.258 L	27-Jan-20 13:01	1
HFPO-DA	13252-13-6	ND	1.45	4.84	9.69		B0A0128	23-Jan-20	0.258 L	27-Jan-20 13:01	1
ADONA	919005-14-4	ND	1.45	4.84	9.69		B0A0128	23-Jan-20	0.258 L	27-Jan-20 13:01	1
9CI-PF3ONS	756426-58-1	ND	1.45	4.84	9.69		B0A0128	23-Jan-20	0.258 L	27-Jan-20 13:01	1
11CI-PF3OUdS	763051-92-9	ND	1.45	4.84	9.69		B0A0128	23-Jan-20	0.258 L	27-Jan-20 13:01	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	117	70 - 130		B0A0128	23-Jan-20	0.258 L	27-Jan-20 13:01	1
13C2-PFDA	SURR	115	70 - 130		B0A0128	23-Jan-20	0.258 L	27-Jan-20 13:01	1
d5-EtFOSAA	SURR	92.2	70 - 130		B0A0128	23-Jan-20	0.258 L	27-Jan-20 13:01	1
13C3-HFPO-DA	SURR	107	70 - 130		B0A0128	23-Jan-20	0.258 L	27-Jan-20 13:01	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

MWZ/7/20

**DATA VALIDATION SUMMARY REPORT
NAS WHIDBEY ISLAND, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon
 SDG: 2001113
 Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
 Site: NAS Whidbey Island, Residential Wells, CTO-4041, Washington
 Date: July 1, 2020

PFAS			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-CV-1RW27-0520	2001113-01	Water
2	WI-CV-1FB27-0520	2001113-02	Water
3	WI-CV-1RW25-0520	2001113-03	Water
4	WI-CV-1FB25-0520	2001113-04	Water
5	WI-CV-1RW26-0520	2001113-05	Water
6	WI-CV-1RW26P-0520	2001113-06	Water
7	WI-CV-1FB26-0520	2001113-07	Water
8	WI-CV-1RW23-0520	2001113-08	Water
9	WI-CV-1FB23-0520	2001113-09	Water
10	WI-CV-3RW18-0520	2001113-10	Water
11	WI-CV-3FB18-0520	2001113-11	Water
12	WI-CV-3RW11-0520	2001113-12	Water
13	WI-CV-3RW11P-0520	2001113-13	Water
14	WI-CV-3FB11-0520	2001113-14	Water
15	WI-AF-1RW28-0520	2001113-15	Water
15MS	WI-AF-1RW28-0520MS	2001113-15MS	Water
15MSD	WI-AF-1RW28-0520MSD	2001113-15MSD	Water
16	WI-AF-1FB28-0520	2001113-16	Water

A full data validation was performed on the analytical data for nine water samples and seven aqueous field blank samples collected on May 20, 2019 by CH2M Hill at the NAS Whidbey Island site in Washington. The samples were analyzed under the EPA Method “Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)”.

Specific method references are as follows:

Analysis
PFAS

Method References
USEPA Method 537.1

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, DoD Final General Data Validation Guidelines, November 2019, and the USEPA Data Review and Validation Guidelines as follows:

- The USEPA “Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537,” November 2018;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 100% of the detected results in the samples.

Data Usability Assessment

There were no serious deficiencies of data.

The data are acceptable for the intended purposes. There were no qualifications.

Perfluorinated Alkyl Substances (PFAS)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC sample results are summarized in the table below.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WI-CV-1FB27-0520	None - ND	-	-	-
WI-CV-1FB25-0520	None - ND	-	-	-
WI-CV-1FB26-0520	None - ND	-	-	-
WI-CV-1FB23-0520	None - ND	-	-	-
WI-CV-3FB18-0520	None - ND	-	-	-
WI-CV-3FB11-0520	None - ND	-	-	-
WI-AF-1FB28-0520	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD samples exhibited acceptable percent recoveries (%R) and RPD values.

Laboratory Control Samples (LCS)

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- All criteria were met.

Field Duplicate Sample Precision

- Field duplicate results are summarized below. The precision was acceptable.

Compound	WI-CV-1RW26-0520 ng/L	WI-CV-1RW26P-0520 ng/L	RPD	Qualifier
None	ND	ND	-	-

Compound	WI-CV-3RW11-0520 ng/L	WI-CV-3RW11P-0520 ng/L	RPD	Qualifier
PFBS	42.8	42.8	0%	None
PFHxA	105	107	2%	
PFHpA	17.6	16.8	5%	
PFHxS	97.1	97.4	0%	
PFOA	295	296	0%	
PFOS	1.49	1.49	0%	

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed: Nancy Weaver
Nancy Weaver
Senior Chemist

Dated: 7/6/20

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

Sample ID: WI-CV-1RW27-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001113-01	Column:	BEH C18
Project:	9000NVT3	Date Collected:	20-May-20 09:10	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.773	1.54	2.06		B0E0195	28-May-20	0.243 L	02-Jun-20 04:17	1
PFHxA	307-24-4	ND	0.773	1.54	2.06		B0E0195	28-May-20	0.243 L	02-Jun-20 04:17	1
HFPO-DA	13252-13-6	ND	1.03	2.06	2.32		B0E0195	28-May-20	0.243 L	02-Jun-20 04:17	1
PFHpA	375-85-9	ND	0.773	1.54	2.06		B0E0195	28-May-20	0.243 L	02-Jun-20 04:17	1
ADONA	919005-14-4	ND	0.773	1.54	2.06		B0E0195	28-May-20	0.243 L	02-Jun-20 04:17	1
PFHxS	355-46-4	ND	0.773	1.54	2.06		B0E0195	28-May-20	0.243 L	02-Jun-20 04:17	1
PFOA	335-67-1	ND	0.773	1.54	2.06		B0E0195	28-May-20	0.243 L	02-Jun-20 04:17	1
PFNA	375-95-1	ND	0.773	1.54	2.06		B0E0195	28-May-20	0.243 L	02-Jun-20 04:17	1
PFOS	1763-23-1	ND	0.773	1.54	2.06		B0E0195	28-May-20	0.243 L	02-Jun-20 04:17	1
9CI-PF3ONS	756426-58-1	ND	0.773	1.54	2.06		B0E0195	28-May-20	0.243 L	02-Jun-20 04:17	1
PFDA	335-76-2	ND	0.773	1.54	2.06		B0E0195	28-May-20	0.243 L	02-Jun-20 04:17	1
MeFOSAA	2355-31-9	ND	0.773	1.54	2.06		B0E0195	28-May-20	0.243 L	02-Jun-20 04:17	1
EtFOSAA	2991-50-6	ND	0.773	1.54	2.06		B0E0195	28-May-20	0.243 L	02-Jun-20 04:17	1
PFUnA	2058-94-8	ND	0.773	1.54	2.06		B0E0195	28-May-20	0.243 L	02-Jun-20 04:17	1
PFDaA	307-55-1	ND	0.773	1.54	2.06		B0E0195	28-May-20	0.243 L	02-Jun-20 04:17	1
PFTTrDA	72629-94-8	ND	0.773	1.54	2.06		B0E0195	28-May-20	0.243 L	02-Jun-20 04:17	1
11CI-PF3OUdS	763051-92-9	ND	1.03	2.06	2.32		B0E0195	28-May-20	0.243 L	02-Jun-20 04:17	1
PFTeDA	376-06-7	ND	0.773	1.54	2.06		B0E0195	28-May-20	0.243 L	02-Jun-20 04:17	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130		B0E0195	28-May-20	0.243 L	02-Jun-20 04:17	1
13C2-PFDA	SURR	94.5	70 - 130		B0E0195	28-May-20	0.243 L	02-Jun-20 04:17	1
d5-EtFOSAA	SURR	98.2	70 - 130		B0E0195	28-May-20	0.243 L	02-Jun-20 04:17	1
13C3-HFPO-DA	SURR	100	70 - 130		B0E0195	28-May-20	0.243 L	02-Jun-20 04:17	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 7/1/20

Sample ID: WI-CV-1FB27-0520

EPA Method 537.1

Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	200113-02	Column:	BEH C18		
Project:	9000NVT3	Date Collected:	20-May-20 09:10		Date Received:	22-May-20 10:00				
Location:	Drinking Water									

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 04:28	1
PFHxA	307-24-4	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 04:28	1
HFPO-DA	13252-13-6	ND	1.03	2.07	2.32		B0E0195	28-May-20	0.242 L	02-Jun-20 04:28	1
PFHpA	375-85-9	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 04:28	1
ADONA	919005-14-4	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 04:28	1
PFHxS	355-46-4	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 04:28	1
PFOA	335-67-1	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 04:28	1
PFNA	375-95-1	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 04:28	1
PFOS	1763-23-1	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 04:28	1
9CI-PF3ONS	756426-58-1	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 04:28	1
PFDA	335-76-2	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 04:28	1
MeFOSAA	2355-31-9	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 04:28	1
EtFOSAA	2991-50-6	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 04:28	1
PFUnA	2058-94-8	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 04:28	1
PFDoA	307-55-1	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 04:28	1
PFTrDA	72629-94-8	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 04:28	1
11CI-PF3OUdS	763051-92-9	ND	1.03	2.07	2.32		B0E0195	28-May-20	0.242 L	02-Jun-20 04:28	1
PFTeDA	376-06-7	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 04:28	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	105	70 - 130			B0E0195	28-May-20	0.242 L	02-Jun-20 04:28	1	
13C2-PFDA	SURR	97.5	70 - 130			B0E0195	28-May-20	0.242 L	02-Jun-20 04:28	1	
d5-EtFOSAA	SURR	82.5	70 - 130			B0E0195	28-May-20	0.242 L	02-Jun-20 04:28	1	
13C3-HFPO-DA	SURR	104	70 - 130			B0E0195	28-May-20	0.242 L	02-Jun-20 04:28	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/1/20

Sample ID: WI-CV-1RW25-0520						EPA Method 537.1					
Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	200113-03	Column:	BEH C18			
Project:	9000NVT3	Date Collected:	20-May-20 09:35		Date Received:	22-May-20 10:00					
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.776	1.55	2.07		B0E0195	28-May-20	0.242 L	02-Jun-20 04:39	1
PFHxA	307-24-4	ND	0.776	1.55	2.07		B0E0195	28-May-20	0.242 L	02-Jun-20 04:39	1
HFPO-DA	13252-13-6	ND	1.04	2.07	2.33		B0E0195	28-May-20	0.242 L	02-Jun-20 04:39	1
PFHpA	375-85-9	ND	0.776	1.55	2.07		B0E0195	28-May-20	0.242 L	02-Jun-20 04:39	1
ADONA	919005-14-4	ND	0.776	1.55	2.07		B0E0195	28-May-20	0.242 L	02-Jun-20 04:39	1
PFHxS	355-46-4	ND	0.776	1.55	2.07		B0E0195	28-May-20	0.242 L	02-Jun-20 04:39	1
PFOA	335-67-1	ND	0.776	1.55	2.07		B0E0195	28-May-20	0.242 L	02-Jun-20 04:39	1
PFNA	375-95-1	ND	0.776	1.55	2.07		B0E0195	28-May-20	0.242 L	02-Jun-20 04:39	1
PFOS	1763-23-1	ND	0.776	1.55	2.07		B0E0195	28-May-20	0.242 L	02-Jun-20 04:39	1
9CI-PF3ONS	756426-58-1	ND	0.776	1.55	2.07		B0E0195	28-May-20	0.242 L	02-Jun-20 04:39	1
PFDA	335-76-2	ND	0.776	1.55	2.07		B0E0195	28-May-20	0.242 L	02-Jun-20 04:39	1
MeFOSAA	2355-31-9	ND	0.776	1.55	2.07		B0E0195	28-May-20	0.242 L	02-Jun-20 04:39	1
EtFOSAA	2991-50-6	ND	0.776	1.55	2.07		B0E0195	28-May-20	0.242 L	02-Jun-20 04:39	1
PFUnA	2058-94-8	ND	0.776	1.55	2.07		B0E0195	28-May-20	0.242 L	02-Jun-20 04:39	1
PFDoA	307-55-1	ND	0.776	1.55	2.07		B0E0195	28-May-20	0.242 L	02-Jun-20 04:39	1
PFTTrDA	72629-94-8	ND	0.776	1.55	2.07		B0E0195	28-May-20	0.242 L	02-Jun-20 04:39	1
11CI-PF3OUdS	763051-92-9	ND	1.04	2.07	2.33		B0E0195	28-May-20	0.242 L	02-Jun-20 04:39	1
PFTeDA	376-06-7	ND	0.776	1.55	2.07		B0E0195	28-May-20	0.242 L	02-Jun-20 04:39	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	103	70 - 130			B0E0195	28-May-20	0.242 L	02-Jun-20 04:39	1	
13C2-PFDA	SURR	91.7	70 - 130			B0E0195	28-May-20	0.242 L	02-Jun-20 04:39	1	
d5-EtFOSAA	SURR	84.4	70 - 130			B0E0195	28-May-20	0.242 L	02-Jun-20 04:39	1	
13C3-HFPO-DA	SURR	102	70 - 130			B0E0195	28-May-20	0.242 L	02-Jun-20 04:39	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 7/1/20

Sample ID: WI-CV-1FB25-0520
EPA Method 537.1

Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	2001113-04	Column:	BEH C18		
Project:	9000NVT3	Date Collected:	20-May-20 09:35		Date Received:	22-May-20 10:00				
Location:	Drinking Water									

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 04:50	1
PFHxA	307-24-4	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 04:50	1
HFPO-DA	13252-13-6	ND	1.01	2.02	2.26		B0E0195	28-May-20	0.248 L	02-Jun-20 04:50	1
PFHpA	375-85-9	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 04:50	1
ADONA	919005-14-4	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 04:50	1
PFHxS	355-46-4	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 04:50	1
PFOA	335-67-1	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 04:50	1
PFNA	375-95-1	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 04:50	1
PFOS	1763-23-1	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 04:50	1
9CI-PF3ONS	756426-58-1	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 04:50	1
PFDA	335-76-2	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 04:50	1
MeFOSAA	2355-31-9	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 04:50	1
EtFOSAA	2991-50-6	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 04:50	1
PFUnA	2058-94-8	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 04:50	1
PFDoA	307-55-1	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 04:50	1
PFTTrDA	72629-94-8	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 04:50	1
11CI-PF3OUdS	763051-92-9	ND	1.01	2.02	2.26		B0E0195	28-May-20	0.248 L	02-Jun-20 04:50	1
PFTeDA	376-06-7	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 04:50	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	106	70 - 130		B0E0195	28-May-20	0.248 L	02-Jun-20 04:50	1
13C2-PFDA	SURR	102	70 - 130		B0E0195	28-May-20	0.248 L	02-Jun-20 04:50	1
d5-EtFOSAA	SURR	102	70 - 130		B0E0195	28-May-20	0.248 L	02-Jun-20 04:50	1
13C3-HFPO-DA	SURR	107	70 - 130		B0E0195	28-May-20	0.248 L	02-Jun-20 04:50	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

m 7/1/20

Sample ID: WI-CV-1RW26-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001113-05	Column:	BEH C18
Project:	9000NVT3	Date Collected:	20-May-20 09:50	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.758	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 05:01	1
PFHxA	307-24-4	ND	0.758	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 05:01	1
HFPO-DA	13252-13-6	ND	1.01	2.02	2.27		B0E0195	28-May-20	0.248 L	02-Jun-20 05:01	1
PFHpA	375-85-9	ND	0.758	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 05:01	1
ADONA	919005-14-4	ND	0.758	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 05:01	1
PFHxS	355-46-4	ND	0.758	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 05:01	1
PFOA	335-67-1	ND	0.758	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 05:01	1
PFNA	375-95-1	ND	0.758	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 05:01	1
PFOS	1763-23-1	ND	0.758	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 05:01	1
9CI-PF3ONS	756426-58-1	ND	0.758	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 05:01	1
PFDA	335-76-2	ND	0.758	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 05:01	1
MeFOSAA	2355-31-9	ND	0.758	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 05:01	1
EtFOSAA	2991-50-6	ND	0.758	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 05:01	1
PFUnA	2058-94-8	ND	0.758	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 05:01	1
PFDaA	307-55-1	ND	0.758	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 05:01	1
PFTTrDA	72629-94-8	ND	0.758	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 05:01	1
11CI-PF3OUdS	763051-92-9	ND	1.01	2.02	2.27		B0E0195	28-May-20	0.248 L	02-Jun-20 05:01	1
PFTeDA	376-06-7	ND	0.758	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 05:01	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.2	70 - 130		B0E0195	28-May-20	0.248 L	02-Jun-20 05:01	1
13C2-PFDA	SURR	88.4	70 - 130		B0E0195	28-May-20	0.248 L	02-Jun-20 05:01	1
d5-EtFOSAA	SURR	86.8	70 - 130		B0E0195	28-May-20	0.248 L	02-Jun-20 05:01	1
13C3-HFPO-DA	SURR	98.6	70 - 130		B0E0195	28-May-20	0.248 L	02-Jun-20 05:01	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw 7/1/20

Sample ID: WI-CV-1RW26P-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001113-06	Column:	BEH C18
Project:	9000NVT3	Date Collected:	20-May-20 10:00	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.759	1.52	2.02		B0E0195	28-May-20	0.247 L	02-Jun-20 05:12	1
PFHxA	307-24-4	ND	0.759	1.52	2.02		B0E0195	28-May-20	0.247 L	02-Jun-20 05:12	1
HFPO-DA	13252-13-6	ND	1.01	2.02	2.28		B0E0195	28-May-20	0.247 L	02-Jun-20 05:12	1
PFHpA	375-85-9	ND	0.759	1.52	2.02		B0E0195	28-May-20	0.247 L	02-Jun-20 05:12	1
ADONA	919005-14-4	ND	0.759	1.52	2.02		B0E0195	28-May-20	0.247 L	02-Jun-20 05:12	1
PFHxS	355-46-4	ND	0.759	1.52	2.02		B0E0195	28-May-20	0.247 L	02-Jun-20 05:12	1
PFOA	335-67-1	ND	0.759	1.52	2.02		B0E0195	28-May-20	0.247 L	02-Jun-20 05:12	1
PFNA	375-95-1	ND	0.759	1.52	2.02		B0E0195	28-May-20	0.247 L	02-Jun-20 05:12	1
PFOS	1763-23-1	ND	0.759	1.52	2.02		B0E0195	28-May-20	0.247 L	02-Jun-20 05:12	1
9CI-PF3ONS	756426-58-1	ND	0.759	1.52	2.02		B0E0195	28-May-20	0.247 L	02-Jun-20 05:12	1
PFDA	335-76-2	ND	0.759	1.52	2.02		B0E0195	28-May-20	0.247 L	02-Jun-20 05:12	1
MeFOSAA	2355-31-9	ND	0.759	1.52	2.02		B0E0195	28-May-20	0.247 L	02-Jun-20 05:12	1
EtFOSAA	2991-50-6	ND	0.759	1.52	2.02		B0E0195	28-May-20	0.247 L	02-Jun-20 05:12	1
PFUnA	2058-94-8	ND	0.759	1.52	2.02		B0E0195	28-May-20	0.247 L	02-Jun-20 05:12	1
PFDoA	307-55-1	ND	0.759	1.52	2.02		B0E0195	28-May-20	0.247 L	02-Jun-20 05:12	1
PFTTrDA	72629-94-8	ND	0.759	1.52	2.02		B0E0195	28-May-20	0.247 L	02-Jun-20 05:12	1
11CI-PF3OUdS	763051-92-9	ND	1.01	2.02	2.28		B0E0195	28-May-20	0.247 L	02-Jun-20 05:12	1
PFTeDA	376-06-7	ND	0.759	1.52	2.02		B0E0195	28-May-20	0.247 L	02-Jun-20 05:12	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130		B0E0195	28-May-20	0.247 L	02-Jun-20 05:12	1
13C2-PFDA	SURR	94.9	70 - 130		B0E0195	28-May-20	0.247 L	02-Jun-20 05:12	1
d5-EtFOSAA	SURR	88.0	70 - 130		B0E0195	28-May-20	0.247 L	02-Jun-20 05:12	1
13C3-HFPO-DA	SURR	101	70 - 130		B0E0195	28-May-20	0.247 L	02-Jun-20 05:12	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nr 7/1/20

Sample ID: WI-CV-1FB26-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001113-07	Column:	BEH C18
Project:	9000NVT3	Date Collected:	20-May-20 09:50	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 05:23	1
PFHxA	307-24-4	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 05:23	1
HFPO-DA	13252-13-6	ND	1.01	2.02	2.27		B0E0195	28-May-20	0.248 L	02-Jun-20 05:23	1
PFHpA	375-85-9	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 05:23	1
ADONA	919005-14-4	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 05:23	1
PFHxS	355-46-4	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 05:23	1
PFOA	335-67-1	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 05:23	1
PFNA	375-95-1	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 05:23	1
PFOS	1763-23-1	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 05:23	1
9CI-PF3ONS	756426-58-1	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 05:23	1
PFDA	335-76-2	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 05:23	1
MeFOSAA	2355-31-9	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 05:23	1
EtFOSAA	2991-50-6	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 05:23	1
PFUnA	2058-94-8	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 05:23	1
PFDoA	307-55-1	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 05:23	1
PFTTrDA	72629-94-8	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 05:23	1
11CI-PF3OUdS	763051-92-9	ND	1.01	2.02	2.27		B0E0195	28-May-20	0.248 L	02-Jun-20 05:23	1
PFTeDA	376-06-7	ND	0.755	1.51	2.01		B0E0195	28-May-20	0.248 L	02-Jun-20 05:23	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	103	70 - 130			B0E0195	28-May-20	0.248 L	02-Jun-20 05:23	1	
13C2-PFDA	SURR	94.4	70 - 130			B0E0195	28-May-20	0.248 L	02-Jun-20 05:23	1	
d5-EtFOSAA	SURR	86.8	70 - 130			B0E0195	28-May-20	0.248 L	02-Jun-20 05:23	1	
13C3-HFPO-DA	SURR	103	70 - 130			B0E0195	28-May-20	0.248 L	02-Jun-20 05:23	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/1/20

Sample ID: WI-CV-1RW23-0520 **EPA Method 537.1**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001113-08	Column:	BEH C18
Project:	9000NVT3	Date Collected:	20-May-20 10:10	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	18.7	0.763	1.52	2.04		B0E0195	28-May-20	0.246 L	02-Jun-20 05:34	1
PFHxA	307-24-4	40.7	0.763	1.52	2.04		B0E0195	28-May-20	0.246 L	02-Jun-20 05:34	1
HFPO-DA	13252-13-6	ND	1.02	2.03	2.29		B0E0195	28-May-20	0.246 L	02-Jun-20 05:34	1
PFHpA	375-85-9	9.85	0.763	1.52	2.04		B0E0195	28-May-20	0.246 L	02-Jun-20 05:34	1
ADONA	919005-14-4	ND	0.763	1.52	2.04		B0E0195	28-May-20	0.246 L	02-Jun-20 05:34	1
PFHxS	355-46-4	61.0	0.763	1.52	2.04		B0E0195	28-May-20	0.246 L	02-Jun-20 05:34	1
PFOA	335-67-1	58.7	0.763	1.52	2.04		B0E0195	28-May-20	0.246 L	02-Jun-20 05:34	1
PFNA	375-95-1	ND	0.763	1.52	2.04		B0E0195	28-May-20	0.246 L	02-Jun-20 05:34	1
PFOS	1763-23-1	1.44	0.763	1.52	2.04	J	B0E0195	28-May-20	0.246 L	02-Jun-20 05:34	1
9CI-PF3ONS	756426-58-1	ND	0.763	1.52	2.04		B0E0195	28-May-20	0.246 L	02-Jun-20 05:34	1
PFDA	335-76-2	ND	0.763	1.52	2.04		B0E0195	28-May-20	0.246 L	02-Jun-20 05:34	1
MeFOSAA	2355-31-9	ND	0.763	1.52	2.04		B0E0195	28-May-20	0.246 L	02-Jun-20 05:34	1
EtFOSAA	2991-50-6	ND	0.763	1.52	2.04		B0E0195	28-May-20	0.246 L	02-Jun-20 05:34	1
PFUnA	2058-94-8	ND	0.763	1.52	2.04		B0E0195	28-May-20	0.246 L	02-Jun-20 05:34	1
PFDoA	307-55-1	ND	0.763	1.52	2.04		B0E0195	28-May-20	0.246 L	02-Jun-20 05:34	1
PFTTrDA	72629-94-8	ND	0.763	1.52	2.04		B0E0195	28-May-20	0.246 L	02-Jun-20 05:34	1
11CI-PF3OUdS	763051-92-9	ND	1.02	2.03	2.29		B0E0195	28-May-20	0.246 L	02-Jun-20 05:34	1
PFTeDA	376-06-7	ND	0.763	1.52	2.04		B0E0195	28-May-20	0.246 L	02-Jun-20 05:34	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130		B0E0195	28-May-20	0.246 L	02-Jun-20 05:34	1
13C2-PFDA	SURR	95.9	70 - 130		B0E0195	28-May-20	0.246 L	02-Jun-20 05:34	1
d5-EtFOSAA	SURR	84.5	70 - 130		B0E0195	28-May-20	0.246 L	02-Jun-20 05:34	1
13C3-HFPO-DA	SURR	102	70 - 130		B0E0195	28-May-20	0.246 L	02-Jun-20 05:34	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

New 7/1/20

Sample ID: WI-CV-1FB23-0520						EPA Method 537.1					
Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	200113-09	Column:	BEH C18			
Project:	9000NVT3	Date Collected:	20-May-20 10:10		Date Received:	22-May-20 10:00					
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 05:45	1
PFHxA	307-24-4	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 05:45	1
HFPO-DA	13252-13-6	ND	1.03	2.07	2.32		B0E0195	28-May-20	0.242 L	02-Jun-20 05:45	1
PFHpA	375-85-9	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 05:45	1
ADONA	919005-14-4	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 05:45	1
PFHxS	355-46-4	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 05:45	1
PFOA	335-67-1	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 05:45	1
PFNA	375-95-1	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 05:45	1
PFOS	1763-23-1	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 05:45	1
9CI-PF3ONS	756426-58-1	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 05:45	1
PFDA	335-76-2	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 05:45	1
MeFOSAA	2355-31-9	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 05:45	1
EtFOSAA	2991-50-6	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 05:45	1
PFUnA	2058-94-8	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 05:45	1
PFDoA	307-55-1	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 05:45	1
PFTTrDA	72629-94-8	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 05:45	1
11CI-PF3OUdS	763051-92-9	ND	1.03	2.07	2.32		B0E0195	28-May-20	0.242 L	02-Jun-20 05:45	1
PFTeDA	376-06-7	ND	0.774	1.55	2.06		B0E0195	28-May-20	0.242 L	02-Jun-20 05:45	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	98.5	70 - 130			B0E0195	28-May-20	0.242 L	02-Jun-20 05:45	1	
13C2-PFDA	SURR	94.3	70 - 130			B0E0195	28-May-20	0.242 L	02-Jun-20 05:45	1	
d5-EtFOSAA	SURR	87.5	70 - 130			B0E0195	28-May-20	0.242 L	02-Jun-20 05:45	1	
13C3-HFPO-DA	SURR	99.6	70 - 130			B0E0195	28-May-20	0.242 L	02-Jun-20 05:45	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

New 7/1/20

Sample ID: WI-CV-3RW18-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001113-10	Column:	BEH C18
Project:	9000NVT3	Date Collected:	20-May-20 10:55	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.754	1.51	2.01		B0E0195	28-May-20	0.249 L	02-Jun-20 05:56	1
PFHxA	307-24-4	ND	0.754	1.51	2.01		B0E0195	28-May-20	0.249 L	02-Jun-20 05:56	1
HFPO-DA	13252-13-6	ND	1.00	2.01	2.26		B0E0195	28-May-20	0.249 L	02-Jun-20 05:56	1
PFHpA	375-85-9	ND	0.754	1.51	2.01		B0E0195	28-May-20	0.249 L	02-Jun-20 05:56	1
ADONA	919005-14-4	ND	0.754	1.51	2.01		B0E0195	28-May-20	0.249 L	02-Jun-20 05:56	1
PFHxS	355-46-4	ND	0.754	1.51	2.01		B0E0195	28-May-20	0.249 L	02-Jun-20 05:56	1
PFOA	335-67-1	ND	0.754	1.51	2.01		B0E0195	28-May-20	0.249 L	02-Jun-20 05:56	1
PFNA	375-95-1	ND	0.754	1.51	2.01		B0E0195	28-May-20	0.249 L	02-Jun-20 05:56	1
PFOS	1763-23-1	ND	0.754	1.51	2.01		B0E0195	28-May-20	0.249 L	02-Jun-20 05:56	1
9CI-PF3ONS	756426-58-1	ND	0.754	1.51	2.01		B0E0195	28-May-20	0.249 L	02-Jun-20 05:56	1
PFDA	335-76-2	ND	0.754	1.51	2.01		B0E0195	28-May-20	0.249 L	02-Jun-20 05:56	1
MeFOSAA	2355-31-9	ND	0.754	1.51	2.01		B0E0195	28-May-20	0.249 L	02-Jun-20 05:56	1
EtFOSAA	2991-50-6	ND	0.754	1.51	2.01		B0E0195	28-May-20	0.249 L	02-Jun-20 05:56	1
PFUnA	2058-94-8	ND	0.754	1.51	2.01		B0E0195	28-May-20	0.249 L	02-Jun-20 05:56	1
PFDoA	307-55-1	ND	0.754	1.51	2.01		B0E0195	28-May-20	0.249 L	02-Jun-20 05:56	1
PFTTrDA	72629-94-8	ND	0.754	1.51	2.01		B0E0195	28-May-20	0.249 L	02-Jun-20 05:56	1
11CI-PF3OUdS	763051-92-9	ND	1.00	2.01	2.26		B0E0195	28-May-20	0.249 L	02-Jun-20 05:56	1
PFTeDA	376-06-7	ND	0.754	1.51	2.01		B0E0195	28-May-20	0.249 L	02-Jun-20 05:56	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	101	70 - 130			B0E0195	28-May-20	0.249 L	02-Jun-20 05:56	1	
13C2-PFDA	SURR	86.6	70 - 130			B0E0195	28-May-20	0.249 L	02-Jun-20 05:56	1	
d5-EtFOSAA	SURR	79.2	70 - 130			B0E0195	28-May-20	0.249 L	02-Jun-20 05:56	1	
13C3-HFPO-DA	SURR	102	70 - 130			B0E0195	28-May-20	0.249 L	02-Jun-20 05:56	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

new 7/1/20

Sample ID: WI-CV-3FB18-0520

EPA Method 537.1

Client Data					Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001113-11	Column:	BEH C18		
Project:	9000NVT3	Date Collected:	20-May-20 10:55	Date Received:	22-May-20 10:00				
Location:	Drinking Water								

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.748	1.49	1.99		B0E0195	28-May-20	0.251 L	02-Jun-20 06:07	1
PFHxA	307-24-4	ND	0.748	1.49	1.99		B0E0195	28-May-20	0.251 L	02-Jun-20 06:07	1
HFPO-DA	13252-13-6	ND	0.997	1.99	2.24		B0E0195	28-May-20	0.251 L	02-Jun-20 06:07	1
PFHpA	375-85-9	ND	0.748	1.49	1.99		B0E0195	28-May-20	0.251 L	02-Jun-20 06:07	1
ADONA	919005-14-4	ND	0.748	1.49	1.99		B0E0195	28-May-20	0.251 L	02-Jun-20 06:07	1
PFHxS	355-46-4	ND	0.748	1.49	1.99		B0E0195	28-May-20	0.251 L	02-Jun-20 06:07	1
PFOA	335-67-1	ND	0.748	1.49	1.99		B0E0195	28-May-20	0.251 L	02-Jun-20 06:07	1
PFNA	375-95-1	ND	0.748	1.49	1.99		B0E0195	28-May-20	0.251 L	02-Jun-20 06:07	1
PFOS	1763-23-1	ND	0.748	1.49	1.99		B0E0195	28-May-20	0.251 L	02-Jun-20 06:07	1
9CI-PF3ONS	756426-58-1	ND	0.748	1.49	1.99		B0E0195	28-May-20	0.251 L	02-Jun-20 06:07	1
PFDA	335-76-2	ND	0.748	1.49	1.99		B0E0195	28-May-20	0.251 L	02-Jun-20 06:07	1
MeFOSAA	2355-31-9	ND	0.748	1.49	1.99		B0E0195	28-May-20	0.251 L	02-Jun-20 06:07	1
EtFOSAA	2991-50-6	ND	0.748	1.49	1.99		B0E0195	28-May-20	0.251 L	02-Jun-20 06:07	1
PFUnA	2058-94-8	ND	0.748	1.49	1.99		B0E0195	28-May-20	0.251 L	02-Jun-20 06:07	1
PFDaA	307-55-1	ND	0.748	1.49	1.99		B0E0195	28-May-20	0.251 L	02-Jun-20 06:07	1
PFTrDA	72629-94-8	ND	0.748	1.49	1.99		B0E0195	28-May-20	0.251 L	02-Jun-20 06:07	1
11CI-PF3OUdS	763051-92-9	ND	0.997	1.99	2.24		B0E0195	28-May-20	0.251 L	02-Jun-20 06:07	1
PFTeDA	376-06-7	ND	0.748	1.49	1.99		B0E0195	28-May-20	0.251 L	02-Jun-20 06:07	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	101	70 - 130			B0E0195	28-May-20	0.251 L	02-Jun-20 06:07	1	
13C2-PFDA	SURR	95.8	70 - 130			B0E0195	28-May-20	0.251 L	02-Jun-20 06:07	1	
d5-EtFOSAA	SURR	85.7	70 - 130			B0E0195	28-May-20	0.251 L	02-Jun-20 06:07	1	
13C3-HFPO-DA	SURR	100	70 - 130			B0E0195	28-May-20	0.251 L	02-Jun-20 06:07	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

02/11/20

Sample ID: WI-CV-3RW11-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001113-12	Column:	BEH C18
Project:	9000NVT3	Date Collected:	20-May-20 11:40	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	42.8	0.787	1.58	2.10		B0E0195	28-May-20	0.238 L	02-Jun-20 06:18	1
PFHxA	307-24-4	105	0.787	1.58	2.10		B0E0195	28-May-20	0.238 L	02-Jun-20 06:18	1
HFPO-DA	13252-13-6	ND	1.05	2.10	2.36		B0E0195	28-May-20	0.238 L	02-Jun-20 06:18	1
PFHpA	375-85-9	17.6	0.787	1.58	2.10		B0E0195	28-May-20	0.238 L	02-Jun-20 06:18	1
ADONA	919005-14-4	ND	0.787	1.58	2.10		B0E0195	28-May-20	0.238 L	02-Jun-20 06:18	1
PFHxS	355-46-4	97.1	0.787	1.58	2.10		B0E0195	28-May-20	0.238 L	02-Jun-20 06:18	1
PFOA	335-67-1	295	0.787	1.58	2.10		B0E0195	28-May-20	0.238 L	02-Jun-20 06:18	1
PFNA	375-95-1	ND	0.787	1.58	2.10		B0E0195	28-May-20	0.238 L	02-Jun-20 06:18	1
PFOS	1763-23-1	1.49	0.787	1.58	2.10	J	B0E0195	28-May-20	0.238 L	02-Jun-20 06:18	1
9CI-PF3ONS	756426-58-1	ND	0.787	1.58	2.10		B0E0195	28-May-20	0.238 L	02-Jun-20 06:18	1
PFDA	335-76-2	ND	0.787	1.58	2.10		B0E0195	28-May-20	0.238 L	02-Jun-20 06:18	1
MeFOSAA	2355-31-9	ND	0.787	1.58	2.10		B0E0195	28-May-20	0.238 L	02-Jun-20 06:18	1
EtFOSAA	2991-50-6	ND	0.787	1.58	2.10		B0E0195	28-May-20	0.238 L	02-Jun-20 06:18	1
PFUnA	2058-94-8	ND	0.787	1.58	2.10		B0E0195	28-May-20	0.238 L	02-Jun-20 06:18	1
PFDoA	307-55-1	ND	0.787	1.58	2.10		B0E0195	28-May-20	0.238 L	02-Jun-20 06:18	1
PFTTrDA	72629-94-8	ND	0.787	1.58	2.10		B0E0195	28-May-20	0.238 L	02-Jun-20 06:18	1
11CI-PF3OUdS	763051-92-9	ND	1.05	2.10	2.36		B0E0195	28-May-20	0.238 L	02-Jun-20 06:18	1
PFTeDA	376-06-7	ND	0.787	1.58	2.10		B0E0195	28-May-20	0.238 L	02-Jun-20 06:18	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	101	70 - 130			B0E0195	28-May-20	0.238 L	02-Jun-20 06:18	1	
13C2-PFDA	SURR	93.7	70 - 130			B0E0195	28-May-20	0.238 L	02-Jun-20 06:18	1	
d5-EtFOSAA	SURR	88.9	70 - 130			B0E0195	28-May-20	0.238 L	02-Jun-20 06:18	1	
13C3-HFPO-DA	SURR	102	70 - 130			B0E0195	28-May-20	0.238 L	02-Jun-20 06:18	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

new 7/11/20

Sample ID: WI-CV-3RW11P-0520						EPA Method 537.1					
Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water			Lab Sample:	2001113-13	Column:	BEH C18		
Project:	9000NVT3	Date Collected:	20-May-20 11:50			Date Received:	22-May-20 10:00				
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	42.8	0.756	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 06:29	1
PFHxA	307-24-4	107	0.756	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 06:29	1
HFPO-DA	13252-13-6	ND	1.01	2.02	2.27		B0E0195	28-May-20	0.248 L	02-Jun-20 06:29	1
PFHpA	375-85-9	16.8	0.756	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 06:29	1
ADONA	919005-14-4	ND	0.756	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 06:29	1
PFHxS	355-46-4	97.4	0.756	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 06:29	1
PFOA	335-67-1	296	0.756	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 06:29	1
PFNA	375-95-1	ND	0.756	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 06:29	1
PFOS	1763-23-1	1.49	0.756	1.51	2.02	J	B0E0195	28-May-20	0.248 L	02-Jun-20 06:29	1
9CI-PF3ONS	756426-58-1	ND	0.756	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 06:29	1
PFDA	335-76-2	ND	0.756	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 06:29	1
MeFOSAA	2355-31-9	ND	0.756	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 06:29	1
EtFOSAA	2991-50-6	ND	0.756	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 06:29	1
PFUnA	2058-94-8	ND	0.756	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 06:29	1
PFDoA	307-55-1	ND	0.756	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 06:29	1
PFTrDA	72629-94-8	ND	0.756	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 06:29	1
11CI-PF3OUdS	763051-92-9	ND	1.01	2.02	2.27		B0E0195	28-May-20	0.248 L	02-Jun-20 06:29	1
PFTeDA	376-06-7	ND	0.756	1.51	2.02		B0E0195	28-May-20	0.248 L	02-Jun-20 06:29	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	100	70 - 130			B0E0195	28-May-20	0.248 L	02-Jun-20 06:29	1	
13C2-PFDA	SURR	94.9	70 - 130			B0E0195	28-May-20	0.248 L	02-Jun-20 06:29	1	
d5-EtFOSAA	SURR	74.1	70 - 130			B0E0195	28-May-20	0.248 L	02-Jun-20 06:29	1	
13C3-HFPO-DA	SURR	101	70 - 130			B0E0195	28-May-20	0.248 L	02-Jun-20 06:29	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

new 7/1/20

Sample ID: WI-CV-3FB11-0520						EPA Method 537.1					
Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	2001113-14	Column:	BEH C18			
Project:	9000NVT3	Date Collected:	20-May-20 11:40		Date Received:	22-May-20 10:00					
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.766	1.53	2.04		B0E0195	28-May-20	0.245 L	02-Jun-20 06:40	1
PFHxA	307-24-4	ND	0.766	1.53	2.04		B0E0195	28-May-20	0.245 L	02-Jun-20 06:40	1
HFPO-DA	13252-13-6	ND	1.02	2.04	2.30		B0E0195	28-May-20	0.245 L	02-Jun-20 06:40	1
PFHpA	375-85-9	ND	0.766	1.53	2.04		B0E0195	28-May-20	0.245 L	02-Jun-20 06:40	1
ADONA	919005-14-4	ND	0.766	1.53	2.04		B0E0195	28-May-20	0.245 L	02-Jun-20 06:40	1
PFHxS	355-46-4	ND	0.766	1.53	2.04		B0E0195	28-May-20	0.245 L	02-Jun-20 06:40	1
PFOA	335-67-1	ND	0.766	1.53	2.04		B0E0195	28-May-20	0.245 L	02-Jun-20 06:40	1
PFNA	375-95-1	ND	0.766	1.53	2.04		B0E0195	28-May-20	0.245 L	02-Jun-20 06:40	1
PFOS	1763-23-1	ND	0.766	1.53	2.04		B0E0195	28-May-20	0.245 L	02-Jun-20 06:40	1
9CI-PF3ONS	756426-58-1	ND	0.766	1.53	2.04		B0E0195	28-May-20	0.245 L	02-Jun-20 06:40	1
PFDA	335-76-2	ND	0.766	1.53	2.04		B0E0195	28-May-20	0.245 L	02-Jun-20 06:40	1
MeFOSAA	2355-31-9	ND	0.766	1.53	2.04		B0E0195	28-May-20	0.245 L	02-Jun-20 06:40	1
EtFOSAA	2991-50-6	ND	0.766	1.53	2.04		B0E0195	28-May-20	0.245 L	02-Jun-20 06:40	1
PFUnA	2058-94-8	ND	0.766	1.53	2.04		B0E0195	28-May-20	0.245 L	02-Jun-20 06:40	1
PFDoA	307-55-1	ND	0.766	1.53	2.04		B0E0195	28-May-20	0.245 L	02-Jun-20 06:40	1
PFTTrDA	72629-94-8	ND	0.766	1.53	2.04		B0E0195	28-May-20	0.245 L	02-Jun-20 06:40	1
11CI-PF3OUdS	763051-92-9	ND	1.02	2.04	2.30		B0E0195	28-May-20	0.245 L	02-Jun-20 06:40	1
PFTeDA	376-06-7	ND	0.766	1.53	2.04		B0E0195	28-May-20	0.245 L	02-Jun-20 06:40	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	103	70 - 130			B0E0195	28-May-20	0.245 L	02-Jun-20 06:40	1	
13C2-PFDA	SURR	96.8	70 - 130			B0E0195	28-May-20	0.245 L	02-Jun-20 06:40	1	
d5-EtFOSAA	SURR	95.1	70 - 130			B0E0195	28-May-20	0.245 L	02-Jun-20 06:40	1	
13C3-HFPO-DA	SURR	103	70 - 130			B0E0195	28-May-20	0.245 L	02-Jun-20 06:40	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 7/11/20

Sample ID: WI-AF-1RW28-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001113-15	Column:	BEH C18
Project:	9000NVT3	Date Collected:	20-May-20 14:50	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	2.48	0.782	1.56	2.09		B0E0195	28-May-20	0.240 L	02-Jun-20 06:51	1
PFHxA	307-24-4	5.49	0.782	1.56	2.09		B0E0195	28-May-20	0.240 L	02-Jun-20 06:51	1
HFPO-DA	13252-13-6	ND	1.04	2.08	2.35		B0E0195	28-May-20	0.240 L	02-Jun-20 06:51	1
PFHpA	375-85-9	3.43	0.782	1.56	2.09		B0E0195	28-May-20	0.240 L	02-Jun-20 06:51	1
ADONA	919005-14-4	ND	0.782	1.56	2.09		B0E0195	28-May-20	0.240 L	02-Jun-20 06:51	1
PFHxS	355-46-4	8.99	0.782	1.56	2.09		B0E0195	28-May-20	0.240 L	02-Jun-20 06:51	1
PFOA	335-67-1	28.4	0.782	1.56	2.09		B0E0195	28-May-20	0.240 L	02-Jun-20 06:51	1
PFNA	375-95-1	ND	0.782	1.56	2.09		B0E0195	28-May-20	0.240 L	02-Jun-20 06:51	1
PFOS	1763-23-1	0.850	0.782	1.56	2.09	J	B0E0195	28-May-20	0.240 L	02-Jun-20 06:51	1
9CI-PF3ONS	756426-58-1	ND	0.782	1.56	2.09		B0E0195	28-May-20	0.240 L	02-Jun-20 06:51	1
PFDA	335-76-2	ND	0.782	1.56	2.09		B0E0195	28-May-20	0.240 L	02-Jun-20 06:51	1
MeFOSAA	2355-31-9	ND	0.782	1.56	2.09		B0E0195	28-May-20	0.240 L	02-Jun-20 06:51	1
EtFOSAA	2991-50-6	ND	0.782	1.56	2.09		B0E0195	28-May-20	0.240 L	02-Jun-20 06:51	1
PFUnA	2058-94-8	ND	0.782	1.56	2.09		B0E0195	28-May-20	0.240 L	02-Jun-20 06:51	1
PFDoA	307-55-1	ND	0.782	1.56	2.09		B0E0195	28-May-20	0.240 L	02-Jun-20 06:51	1
PFTTrDA	72629-94-8	ND	0.782	1.56	2.09		B0E0195	28-May-20	0.240 L	02-Jun-20 06:51	1
11CI-PF3OUdS	763051-92-9	ND	1.04	2.08	2.35		B0E0195	28-May-20	0.240 L	02-Jun-20 06:51	1
PFTeDA	376-06-7	ND	0.782	1.56	2.09		B0E0195	28-May-20	0.240 L	02-Jun-20 06:51	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	100	70 - 130			B0E0195	28-May-20	0.240 L	02-Jun-20 06:51	1	
13C2-PFDA	SURR	89.6	70 - 130			B0E0195	28-May-20	0.240 L	02-Jun-20 06:51	1	
d5-EtFOSAA	SURR	89.6	70 - 130			B0E0195	28-May-20	0.240 L	02-Jun-20 06:51	1	
13C3-HFPO-DA	SURR	97.8	70 - 130			B0E0195	28-May-20	0.240 L	02-Jun-20 06:51	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

ms 7/1/20

Sample ID: WI-AF-1FB28-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001113-16	Column:	BEH C18
Project:	9000NVT3	Date Collected:	20-May-20 14:50	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.725	1.45	1.93		B0E0195	28-May-20	0.259 L	02-Jun-20 07:02	1
PFHxA	307-24-4	ND	0.725	1.45	1.93		B0E0195	28-May-20	0.259 L	02-Jun-20 07:02	1
HFPO-DA	13252-13-6	ND	0.967	1.93	2.18		B0E0195	28-May-20	0.259 L	02-Jun-20 07:02	1
PFHpA	375-85-9	ND	0.725	1.45	1.93		B0E0195	28-May-20	0.259 L	02-Jun-20 07:02	1
ADONA	919005-14-4	ND	0.725	1.45	1.93		B0E0195	28-May-20	0.259 L	02-Jun-20 07:02	1
PFHxS	355-46-4	ND	0.725	1.45	1.93		B0E0195	28-May-20	0.259 L	02-Jun-20 07:02	1
PFOA	335-67-1	ND	0.725	1.45	1.93		B0E0195	28-May-20	0.259 L	02-Jun-20 07:02	1
PFNA	375-95-1	ND	0.725	1.45	1.93		B0E0195	28-May-20	0.259 L	02-Jun-20 07:02	1
PFOS	1763-23-1	ND	0.725	1.45	1.93		B0E0195	28-May-20	0.259 L	02-Jun-20 07:02	1
9CI-PF3ONS	756426-58-1	ND	0.725	1.45	1.93		B0E0195	28-May-20	0.259 L	02-Jun-20 07:02	1
PFDA	335-76-2	ND	0.725	1.45	1.93		B0E0195	28-May-20	0.259 L	02-Jun-20 07:02	1
MeFOSAA	2355-31-9	ND	0.725	1.45	1.93		B0E0195	28-May-20	0.259 L	02-Jun-20 07:02	1
EtFOSAA	2991-50-6	ND	0.725	1.45	1.93		B0E0195	28-May-20	0.259 L	02-Jun-20 07:02	1
PFUnA	2058-94-8	ND	0.725	1.45	1.93		B0E0195	28-May-20	0.259 L	02-Jun-20 07:02	1
PFDoA	307-55-1	ND	0.725	1.45	1.93		B0E0195	28-May-20	0.259 L	02-Jun-20 07:02	1
PFTTrDA	72629-94-8	ND	0.725	1.45	1.93		B0E0195	28-May-20	0.259 L	02-Jun-20 07:02	1
11CI-PF3OUdS	763051-92-9	ND	0.967	1.93	2.18		B0E0195	28-May-20	0.259 L	02-Jun-20 07:02	1
PFTeDA	376-06-7	ND	0.725	1.45	1.93		B0E0195	28-May-20	0.259 L	02-Jun-20 07:02	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	106	70 - 130			B0E0195	28-May-20	0.259 L	02-Jun-20 07:02	1	
13C2-PFDA	SURR	98.3	70 - 130			B0E0195	28-May-20	0.259 L	02-Jun-20 07:02	1	
d5-EtFOSAA	SURR	97.4	70 - 130			B0E0195	28-May-20	0.259 L	02-Jun-20 07:02	1	
13C3-HFPO-DA	SURR	105	70 - 130			B0E0195	28-May-20	0.259 L	02-Jun-20 07:02	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

new 7/11/20

**DATA VALIDATION SUMMARY REPORT
NAS WHIDBEY ISLAND, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon
 SDG: 2001114
 Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
 Site: NAS Whidbey Island, Residential Wells, CTO-4041, Washington
 Date: July 1, 2020

PFAS			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-A06-RW04-0520	2001114-01	Water
2	WI-A06-FB04-0520	2001114-02	Water
3	WI-AF-3RW41-0520	2001114-03	Water
4	WI-AF-3RW41P-0520	2001114-04	Water
5	WI-AF-3FB41-0520	2001114-05	Water
6	WI-CV-1RW01PP-0520	2001114-06	Water
7	WI-CV-1FB01PP-0520	2001114-07	Water
8	WI-CV-1RW01-0520	2001114-08	Water
9	WI-CV-1FB01-0520	2001114-09	Water
10	WI-CV-3RW17-0520	2001114-10	Water
11	WI-CV-3FB17-0520	2001114-11	Water
12	WI-CV-1RW07-0520	2001114-12	Water
13	WI-CV-1RW07P-0520	2001114-13	Water
14	WI-CV-1FB07-0520	2001114-14	Water

A full data validation was performed on the analytical data for eight water samples and six aqueous field blank samples collected on May 19-20, 2020 by CH2M Hill at the NAS Whidbey Island site in Washington. The samples were analyzed under the EPA Method "Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)".

Specific method references are as follows:

Analysis
PFAS

Method References
USEPA Method 537.1

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, DoD Final General Data Validation Guidelines, November 2019, and the USEPA Data Review and Validation Guidelines as follows:

- The USEPA "Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537," November 2018;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 100% of the detected results in the samples.

Data Usability Assessment

There were no serious deficiencies of data.

The data are acceptable for the intended purposes as qualified for the deficiencies detailed in this report.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contaminations and actions from other exceedances of QC criteria.

Perfluorinated Alkyl Substances (PFAS)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC sample results are summarized in the table below.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WI-A06-FB04-0520	None - ND	-	-	-
WI-AF-3FB41-0520	None - ND	-	-	-
WI-CV-1FB01PP-0520	PFHpA	0.972	U	6
WI-CV-1FB01-0520	None - ND	-	-	-
WI-CV-3FB17-0520	None - ND	-	-	-
WI-CV-1FB07-0520	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- MS/MSD samples were not analyzed.

Laboratory Control Samples (LCS)

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- All criteria were met.

Field Duplicate Sample Precision

- Field duplicate results are summarized below. The precision was acceptable.

Compound	WI-AF-3RW41-0520 ng/L	WI-AF-3RW41P-0520 ng/L	RPD	Qualifier
PFBS	57.4	57.6	0%	None
PFHxA	18.0	19.0	5%	
PFHpA	3.58	3.90	9%	
PFHxS	55.6	61.8	11%	
PFOA	5.58	5.71	2%	
PFOS	16.1	17.3	7%	

Compound	WI-CV-1RW07-0520 ng/L	WI-CV-1RW07P-0520 ng/L	RPD	Qualifier
PFBS	31.9	34.4	8%	None
PFHxA	65.0	74.1	13%	
PFHpA	13.7	16.2	17%	
PFHxS	72.0	75.3	4%	
PFOA	193	221	14%	
PFOS	1.71	1.70	1%	

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed: Nancy Weaver
Nancy Weaver
Senior Chemist

Dated: 7/6/20

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

Sample ID: WI-A06-RW04-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	200114-01	Column:	BEH C18
Project:	9000NVT3	Date Collected:	19-May-20 16:25	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	41.3	0.750	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:35	1
PFHxA	307-24-4	5.06	0.750	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:35	1
HFPO-DA	13252-13-6	ND	1.00	2.00	2.25		B0E0193	27-May-20	0.250 L	02-Jun-20 00:35	1
PFHpA	375-85-9	2.73	0.750	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:35	1
ADONA	919005-14-4	ND	0.750	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:35	1
PFHxS	355-46-4	88.3	0.750	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:35	1
PFOA	335-67-1	3.98	0.750	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:35	1
PFNA	375-95-1	ND	0.750	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:35	1
PFOS	1763-23-1	5.34	0.750	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:35	1
9CI-PF3ONS	756426-58-1	ND	0.750	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:35	1
PFDA	335-76-2	ND	0.750	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:35	1
MeFOSAA	2355-31-9	ND	0.750	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:35	1
EtFOSAA	2991-50-6	ND	0.750	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:35	1
PFUnA	2058-94-8	ND	0.750	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:35	1
PFDoA	307-55-1	ND	0.750	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:35	1
PFTTrDA	72629-94-8	ND	0.750	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:35	1
11CI-PF3OUdS	763051-92-9	ND	1.00	2.00	2.25		B0E0193	27-May-20	0.250 L	02-Jun-20 00:35	1
PFTeDA	376-06-7	ND	0.750	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:35	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	103	70 - 130			B0E0193	27-May-20	0.250 L	02-Jun-20 00:35	1	
13C2-PFDA	SURR	92.1	70 - 130			B0E0193	27-May-20	0.250 L	02-Jun-20 00:35	1	
d5-EtFOSAA	SURR	85.1	70 - 130			B0E0193	27-May-20	0.250 L	02-Jun-20 00:35	1	
13C3-HFPO-DA	SURR	104	70 - 130			B0E0193	27-May-20	0.250 L	02-Jun-20 00:35	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw 7/1/20

Sample ID: WI-A06-FB04-0520						EPA Method 537.1					
Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	200114-02	Column:	BEH C18			
Project:	9000NVT3	Date Collected:	19-May-20 16:25		Date Received:	22-May-20 10:00					
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:46	1
PFHxA	307-24-4	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:46	1
HFPO-DA	13252-13-6	ND	0.998	2.00	2.25		B0E0193	27-May-20	0.250 L	02-Jun-20 00:46	1
PFHpA	375-85-9	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:46	1
ADONA	919005-14-4	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:46	1
PFHxS	355-46-4	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:46	1
PFOA	335-67-1	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:46	1
PFNA	375-95-1	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:46	1
PFOS	1763-23-1	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:46	1
9CI-PF3ONS	756426-58-1	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:46	1
PFDA	335-76-2	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:46	1
MeFOSAA	2355-31-9	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:46	1
EtFOSAA	2991-50-6	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:46	1
PFUnA	2058-94-8	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:46	1
PFDoA	307-55-1	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:46	1
PFTTrDA	72629-94-8	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:46	1
11CI-PF3OUdS	763051-92-9	ND	0.998	2.00	2.25		B0E0193	27-May-20	0.250 L	02-Jun-20 00:46	1
PFTeDA	376-06-7	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 00:46	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	110	70 - 130			B0E0193	27-May-20	0.250 L	02-Jun-20 00:46	1	
13C2-PFDA	SURR	93.8	70 - 130			B0E0193	27-May-20	0.250 L	02-Jun-20 00:46	1	
d5-EtFOSAA	SURR	91.1	70 - 130			B0E0193	27-May-20	0.250 L	02-Jun-20 00:46	1	
13C3-HFPO-DA	SURR	111	70 - 130			B0E0193	27-May-20	0.250 L	02-Jun-20 00:46	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/1/20

Sample ID: WI-AF-3RW41-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001114-03	Column:	BEH C18
Project:	9000NVT3	Date Collected:	19-May-20 17:00	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	57.4	0.775	1.55	2.07		B0E0193	27-May-20	0.242 L	02-Jun-20 00:57	1
PFHxA	307-24-4	18.0	0.775	1.55	2.07		B0E0193	27-May-20	0.242 L	02-Jun-20 00:57	1
HFPO-DA	13252-13-6	ND	1.03	2.07	2.32		B0E0193	27-May-20	0.242 L	02-Jun-20 00:57	1
PFHpA	375-85-9	3.58	0.775	1.55	2.07		B0E0193	27-May-20	0.242 L	02-Jun-20 00:57	1
ADONA	919005-14-4	ND	0.775	1.55	2.07		B0E0193	27-May-20	0.242 L	02-Jun-20 00:57	1
PFHxS	355-46-4	55.6	0.775	1.55	2.07		B0E0193	27-May-20	0.242 L	02-Jun-20 00:57	1
PFOA	335-67-1	5.58	0.775	1.55	2.07		B0E0193	27-May-20	0.242 L	02-Jun-20 00:57	1
PFNA	375-95-1	ND	0.775	1.55	2.07		B0E0193	27-May-20	0.242 L	02-Jun-20 00:57	1
PFOS	1763-23-1	16.1	0.775	1.55	2.07		B0E0193	27-May-20	0.242 L	02-Jun-20 00:57	1
9CI-PF3ONS	756426-58-1	ND	0.775	1.55	2.07		B0E0193	27-May-20	0.242 L	02-Jun-20 00:57	1
PFDA	335-76-2	ND	0.775	1.55	2.07		B0E0193	27-May-20	0.242 L	02-Jun-20 00:57	1
MeFOSAA	2355-31-9	ND	0.775	1.55	2.07		B0E0193	27-May-20	0.242 L	02-Jun-20 00:57	1
EtFOSAA	2991-50-6	ND	0.775	1.55	2.07		B0E0193	27-May-20	0.242 L	02-Jun-20 00:57	1
PFUnA	2058-94-8	ND	0.775	1.55	2.07		B0E0193	27-May-20	0.242 L	02-Jun-20 00:57	1
PFDoA	307-55-1	ND	0.775	1.55	2.07		B0E0193	27-May-20	0.242 L	02-Jun-20 00:57	1
PFTTrDA	72629-94-8	ND	0.775	1.55	2.07		B0E0193	27-May-20	0.242 L	02-Jun-20 00:57	1
11CI-PF3OUdS	763051-92-9	ND	1.03	2.07	2.32		B0E0193	27-May-20	0.242 L	02-Jun-20 00:57	1
PFTeDA	376-06-7	ND	0.775	1.55	2.07		B0E0193	27-May-20	0.242 L	02-Jun-20 00:57	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	100	70 - 130			B0E0193	27-May-20	0.242 L	02-Jun-20 00:57	1	
13C2-PFDA	SURR	87.8	70 - 130			B0E0193	27-May-20	0.242 L	02-Jun-20 00:57	1	
d5-EtFOSAA	SURR	95.9	70 - 130			B0E0193	27-May-20	0.242 L	02-Jun-20 00:57	1	
13C3-HFPO-DA	SURR	99.6	70 - 130			B0E0193	27-May-20	0.242 L	02-Jun-20 00:57	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 7/1/20

Sample ID: WI-AF-3RW41P-0520 **EPA Method 537.1**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001114-04	Column:	BEH C18
Project:	9000NVT3	Date Collected:	19-May-20 17:05	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	57.6	0.755	1.51	2.01		B0E0193	27-May-20	0.248 L	02-Jun-20 01:08	1
PFHxA	307-24-4	19.0	0.755	1.51	2.01		B0E0193	27-May-20	0.248 L	02-Jun-20 01:08	1
HFPO-DA	13252-13-6	ND	1.01	2.02	2.27		B0E0193	27-May-20	0.248 L	02-Jun-20 01:08	1
PFHpA	375-85-9	3.90	0.755	1.51	2.01		B0E0193	27-May-20	0.248 L	02-Jun-20 01:08	1
ADONA	919005-14-4	ND	0.755	1.51	2.01		B0E0193	27-May-20	0.248 L	02-Jun-20 01:08	1
PFHxS	355-46-4	61.8	0.755	1.51	2.01		B0E0193	27-May-20	0.248 L	02-Jun-20 01:08	1
PFOA	335-67-1	5.71	0.755	1.51	2.01		B0E0193	27-May-20	0.248 L	02-Jun-20 01:08	1
PFNA	375-95-1	ND	0.755	1.51	2.01		B0E0193	27-May-20	0.248 L	02-Jun-20 01:08	1
PFOS	1763-23-1	17.3	0.755	1.51	2.01		B0E0193	27-May-20	0.248 L	02-Jun-20 01:08	1
9CI-PF3ONS	756426-58-1	ND	0.755	1.51	2.01		B0E0193	27-May-20	0.248 L	02-Jun-20 01:08	1
PFDA	335-76-2	ND	0.755	1.51	2.01		B0E0193	27-May-20	0.248 L	02-Jun-20 01:08	1
MeFOSAA	2355-31-9	ND	0.755	1.51	2.01		B0E0193	27-May-20	0.248 L	02-Jun-20 01:08	1
EtFOSAA	2991-50-6	ND	0.755	1.51	2.01		B0E0193	27-May-20	0.248 L	02-Jun-20 01:08	1
PFUnA	2058-94-8	ND	0.755	1.51	2.01		B0E0193	27-May-20	0.248 L	02-Jun-20 01:08	1
PFDoA	307-55-1	ND	0.755	1.51	2.01		B0E0193	27-May-20	0.248 L	02-Jun-20 01:08	1
PFTTrDA	72629-94-8	ND	0.755	1.51	2.01		B0E0193	27-May-20	0.248 L	02-Jun-20 01:08	1
11CI-PF3OUdS	763051-92-9	ND	1.01	2.02	2.27		B0E0193	27-May-20	0.248 L	02-Jun-20 01:08	1
PFTeDA	376-06-7	ND	0.755	1.51	2.01		B0E0193	27-May-20	0.248 L	02-Jun-20 01:08	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	98.9	70 - 130		B0E0193	27-May-20	0.248 L	02-Jun-20 01:08	1
13C2-PFDA	SURR	95.3	70 - 130		B0E0193	27-May-20	0.248 L	02-Jun-20 01:08	1
d5-EtFOSAA	SURR	99.4	70 - 130		B0E0193	27-May-20	0.248 L	02-Jun-20 01:08	1
13C3-HFPO-DA	SURR	101	70 - 130		B0E0193	27-May-20	0.248 L	02-Jun-20 01:08	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/1/20

Sample ID: WI-AF-3FB41-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001114-05	Column:	BEH C18
Project:	9000NVT3	Date Collected:	19-May-20 17:00	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.744	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 01:20	1
PFHxA	307-24-4	ND	0.744	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 01:20	1
HFPO-DA	13252-13-6	ND	0.991	1.98	2.23		B0E0193	27-May-20	0.252 L	02-Jun-20 01:20	1
PFHpA	375-85-9	ND	0.744	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 01:20	1
ADONA	919005-14-4	ND	0.744	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 01:20	1
PFHxS	355-46-4	ND	0.744	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 01:20	1
PFOA	335-67-1	ND	0.744	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 01:20	1
PFNA	375-95-1	ND	0.744	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 01:20	1
PFOS	1763-23-1	ND	0.744	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 01:20	1
9CI-PF3ONS	756426-58-1	ND	0.744	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 01:20	1
PFDA	335-76-2	ND	0.744	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 01:20	1
MeFOSAA	2355-31-9	ND	0.744	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 01:20	1
EtFOSAA	2991-50-6	ND	0.744	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 01:20	1
PFUnA	2058-94-8	ND	0.744	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 01:20	1
PFDoA	307-55-1	ND	0.744	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 01:20	1
PFTTrDA	72629-94-8	ND	0.744	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 01:20	1
11CI-PF3OUdS	763051-92-9	ND	0.991	1.98	2.23		B0E0193	27-May-20	0.252 L	02-Jun-20 01:20	1
PFTeDA	376-06-7	ND	0.744	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 01:20	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	108	70 - 130		B0E0193	27-May-20	0.252 L	02-Jun-20 01:20	1
13C2-PFDA	SURR	96.9	70 - 130		B0E0193	27-May-20	0.252 L	02-Jun-20 01:20	1
d5-EtFOSAA	SURR	97.3	70 - 130		B0E0193	27-May-20	0.252 L	02-Jun-20 01:20	1
13C3-HFPO-DA	SURR	106	70 - 130		B0E0193	27-May-20	0.252 L	02-Jun-20 01:20	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

MW 7/1/20

Sample ID: WI-CV-1RW01PP-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	200114-06	Column:	BEH C18
Project:	9000NVT3	Date Collected:	20-May-20 17:00	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	52.5	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 01:31	1
PFHxA	307-24-4	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 01:31	1
HFPO-DA	13252-13-6	ND	1.03	2.05	2.31		B0E0193	27-May-20	0.244 L	02-Jun-20 01:31	1
PFHpA	375-85-9	1.54 0.840 u	0.770	1.54	2.05	✓	B0E0193	27-May-20	0.244 L	02-Jun-20 01:31	1
ADONA	919005-14-4	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 01:31	1
PFHxS	355-46-4	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 01:31	1
PFOA	335-67-1	50.5	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 01:31	1
PFNA	375-95-1	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 01:31	1
PFOS	1763-23-1	24.2	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 01:31	1
9CI-PF3ONS	756426-58-1	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 01:31	1
PFDA	335-76-2	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 01:31	1
MeFOSAA	2355-31-9	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 01:31	1
EtFOSAA	2991-50-6	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 01:31	1
PFUnA	2058-94-8	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 01:31	1
PFDoA	307-55-1	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 01:31	1
PFTTrDA	72629-94-8	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 01:31	1
11CI-PF3OUdS	763051-92-9	ND	1.03	2.05	2.31		B0E0193	27-May-20	0.244 L	02-Jun-20 01:31	1
PFTeDA	376-06-7	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 01:31	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	97.8	70 - 130			B0E0193	27-May-20	0.244 L	02-Jun-20 01:31	1	
13C2-PFDA	SURR	91.2	70 - 130			B0E0193	27-May-20	0.244 L	02-Jun-20 01:31	1	
d5-EtFOSAA	SURR	83.6	70 - 130			B0E0193	27-May-20	0.244 L	02-Jun-20 01:31	1	
13C3-HFPO-DA	SURR	97.0	70 - 130			B0E0193	27-May-20	0.244 L	02-Jun-20 01:31	1	

FBL

rw 7/1/20

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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: WI-CV-1FB01PP-0520						EPA Method 537.1					
Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	200114-07	Column:	BEH C18			
Project:	9000NVT3	Date Collected:	20-May-20 17:00		Date Received:	22-May-20 10:00					
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.771	1.54	2.06		B0E0193	27-May-20	0.243 L	02-Jun-20 01:42	1
PFHxA	307-24-4	ND	0.771	1.54	2.06		B0E0193	27-May-20	0.243 L	02-Jun-20 01:42	1
HFPO-DA	13252-13-6	ND	1.03	2.06	2.31		B0E0193	27-May-20	0.243 L	02-Jun-20 01:42	1
PFHpA	375-85-9	0.972	0.771	1.54	2.06	J	B0E0193	27-May-20	0.243 L	02-Jun-20 01:42	1
ADONA	919005-14-4	ND	0.771	1.54	2.06		B0E0193	27-May-20	0.243 L	02-Jun-20 01:42	1
PFHxS	355-46-4	ND	0.771	1.54	2.06		B0E0193	27-May-20	0.243 L	02-Jun-20 01:42	1
PFOA	335-67-1	ND	0.771	1.54	2.06		B0E0193	27-May-20	0.243 L	02-Jun-20 01:42	1
PFNA	375-95-1	ND	0.771	1.54	2.06		B0E0193	27-May-20	0.243 L	02-Jun-20 01:42	1
PFOS	1763-23-1	ND	0.771	1.54	2.06		B0E0193	27-May-20	0.243 L	02-Jun-20 01:42	1
9CI-PF3ONS	756426-58-1	ND	0.771	1.54	2.06		B0E0193	27-May-20	0.243 L	02-Jun-20 01:42	1
PFDA	335-76-2	ND	0.771	1.54	2.06		B0E0193	27-May-20	0.243 L	02-Jun-20 01:42	1
MeFOSAA	2355-31-9	ND	0.771	1.54	2.06		B0E0193	27-May-20	0.243 L	02-Jun-20 01:42	1
EtFOSAA	2991-50-6	ND	0.771	1.54	2.06		B0E0193	27-May-20	0.243 L	02-Jun-20 01:42	1
PFUnA	2058-94-8	ND	0.771	1.54	2.06		B0E0193	27-May-20	0.243 L	02-Jun-20 01:42	1
PFDoA	307-55-1	ND	0.771	1.54	2.06		B0E0193	27-May-20	0.243 L	02-Jun-20 01:42	1
PFTrDA	72629-94-8	ND	0.771	1.54	2.06		B0E0193	27-May-20	0.243 L	02-Jun-20 01:42	1
11CI-PF3OUdS	763051-92-9	ND	1.03	2.06	2.31		B0E0193	27-May-20	0.243 L	02-Jun-20 01:42	1
PFTeDA	376-06-7	ND	0.771	1.54	2.06		B0E0193	27-May-20	0.243 L	02-Jun-20 01:42	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	102	70 - 130			B0E0193	27-May-20	0.243 L	02-Jun-20 01:42	1	
13C2-PFDA	SURR	94.2	70 - 130			B0E0193	27-May-20	0.243 L	02-Jun-20 01:42	1	
d5-EtFOSAA	SURR	96.2	70 - 130			B0E0193	27-May-20	0.243 L	02-Jun-20 01:42	1	
13C3-HFPO-DA	SURR	104	70 - 130			B0E0193	27-May-20	0.243 L	02-Jun-20 01:42	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw 7/1/20

Sample ID: WI-CV-1RW01-0520						EPA Method 537.1					
Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	200114-08	Column:	BEH C18			
Project:	9000NVT3	Date Collected:	20-May-20 13:55		Date Received:	22-May-20 10:00					
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	32.0	0.753	1.51	2.01		B0E0193	27-May-20	0.249 L	02-Jun-20 01:53	1
PFHxA	307-24-4	89.4	0.753	1.51	2.01		B0E0193	27-May-20	0.249 L	02-Jun-20 01:53	1
HFPO-DA	13252-13-6	ND	1.00	2.01	2.26		B0E0193	27-May-20	0.249 L	02-Jun-20 01:53	1
PFHpA	375-85-9	27.9	0.753	1.51	2.01		B0E0193	27-May-20	0.249 L	02-Jun-20 01:53	1
ADONA	919005-14-4	ND	0.753	1.51	2.01		B0E0193	27-May-20	0.249 L	02-Jun-20 01:53	1
PFHxS	355-46-4	353	0.753	1.51	2.01		B0E0193	27-May-20	0.249 L	02-Jun-20 01:53	1
PFOA	335-67-1	324	0.753	1.51	2.01		B0E0193	27-May-20	0.249 L	02-Jun-20 01:53	1
PFNA	375-95-1	ND	0.753	1.51	2.01		B0E0193	27-May-20	0.249 L	02-Jun-20 01:53	1
PFOS	1763-23-1	1.76	0.753	1.51	2.01	J	B0E0193	27-May-20	0.249 L	02-Jun-20 01:53	1
9CI-PF3ONS	756426-58-1	ND	0.753	1.51	2.01		B0E0193	27-May-20	0.249 L	02-Jun-20 01:53	1
PFDA	335-76-2	ND	0.753	1.51	2.01		B0E0193	27-May-20	0.249 L	02-Jun-20 01:53	1
MeFOSAA	2355-31-9	ND	0.753	1.51	2.01		B0E0193	27-May-20	0.249 L	02-Jun-20 01:53	1
EtFOSAA	2991-50-6	ND	0.753	1.51	2.01		B0E0193	27-May-20	0.249 L	02-Jun-20 01:53	1
PFUnA	2058-94-8	ND	0.753	1.51	2.01		B0E0193	27-May-20	0.249 L	02-Jun-20 01:53	1
PFDoA	307-55-1	ND	0.753	1.51	2.01		B0E0193	27-May-20	0.249 L	02-Jun-20 01:53	1
PFTTrDA	72629-94-8	ND	0.753	1.51	2.01		B0E0193	27-May-20	0.249 L	02-Jun-20 01:53	1
11CI-PF3OUdS	763051-92-9	ND	1.00	2.01	2.26		B0E0193	27-May-20	0.249 L	02-Jun-20 01:53	1
PFTeDA	376-06-7	ND	0.753	1.51	2.01		B0E0193	27-May-20	0.249 L	02-Jun-20 01:53	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	99.2	70 - 130			B0E0193	27-May-20	0.249 L	02-Jun-20 01:53	1	
13C2-PFDA	SURR	93.3	70 - 130			B0E0193	27-May-20	0.249 L	02-Jun-20 01:53	1	
d5-EtFOSAA	SURR	96.9	70 - 130			B0E0193	27-May-20	0.249 L	02-Jun-20 01:53	1	
13C3-HFPO-DA	SURR	98.0	70 - 130			B0E0193	27-May-20	0.249 L	02-Jun-20 01:53	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/1/20

Sample ID: WI-CV-1FB01-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001114-09	Column:	BEH C18
Project:	9000NVT3	Date Collected:	20-May-20 13:55	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.745	1.49	1.99		B0E0193	27-May-20	0.252 L	02-Jun-20 02:04	1
PFHxA	307-24-4	ND	0.745	1.49	1.99		B0E0193	27-May-20	0.252 L	02-Jun-20 02:04	1
HFPO-DA	13252-13-6	ND	0.994	1.98	2.24		B0E0193	27-May-20	0.252 L	02-Jun-20 02:04	1
PFHpA	375-85-9	ND	0.745	1.49	1.99		B0E0193	27-May-20	0.252 L	02-Jun-20 02:04	1
ADONA	919005-14-4	ND	0.745	1.49	1.99		B0E0193	27-May-20	0.252 L	02-Jun-20 02:04	1
PFHxS	355-46-4	ND	0.745	1.49	1.99		B0E0193	27-May-20	0.252 L	02-Jun-20 02:04	1
PFOA	335-67-1	ND	0.745	1.49	1.99		B0E0193	27-May-20	0.252 L	02-Jun-20 02:04	1
PFNA	375-95-1	ND	0.745	1.49	1.99		B0E0193	27-May-20	0.252 L	02-Jun-20 02:04	1
PFOS	1763-23-1	ND	0.745	1.49	1.99		B0E0193	27-May-20	0.252 L	02-Jun-20 02:04	1
9CI-PF3ONS	756426-58-1	ND	0.745	1.49	1.99		B0E0193	27-May-20	0.252 L	02-Jun-20 02:04	1
PFDA	335-76-2	ND	0.745	1.49	1.99		B0E0193	27-May-20	0.252 L	02-Jun-20 02:04	1
MeFOSAA	2355-31-9	ND	0.745	1.49	1.99		B0E0193	27-May-20	0.252 L	02-Jun-20 02:04	1
EtFOSAA	2991-50-6	ND	0.745	1.49	1.99		B0E0193	27-May-20	0.252 L	02-Jun-20 02:04	1
PFUnA	2058-94-8	ND	0.745	1.49	1.99		B0E0193	27-May-20	0.252 L	02-Jun-20 02:04	1
PFDaA	307-55-1	ND	0.745	1.49	1.99		B0E0193	27-May-20	0.252 L	02-Jun-20 02:04	1
PFTrDA	72629-94-8	ND	0.745	1.49	1.99		B0E0193	27-May-20	0.252 L	02-Jun-20 02:04	1
11CI-PF3OUdS	763051-92-9	ND	0.994	1.98	2.24		B0E0193	27-May-20	0.252 L	02-Jun-20 02:04	1
PFTeDA	376-06-7	ND	0.745	1.49	1.99		B0E0193	27-May-20	0.252 L	02-Jun-20 02:04	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130		B0E0193	27-May-20	0.252 L	02-Jun-20 02:04	1
13C2-PFDA	SURR	96.4	70 - 130		B0E0193	27-May-20	0.252 L	02-Jun-20 02:04	1
d5-EtFOSAA	SURR	85.0	70 - 130		B0E0193	27-May-20	0.252 L	02-Jun-20 02:04	1
13C3-HFPO-DA	SURR	99.5	70 - 130		B0E0193	27-May-20	0.252 L	02-Jun-20 02:04	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw 7/1/20

Sample ID: WI-CV-3RW17-0520

EPA Method 537.1

Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	200114-10	Column:	BEH C18		
Project:	9000NVT3	Date Collected:	20-May-20 13:30		Date Received:	22-May-20 10:00				
Location:	Drinking Water									

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 02:15	1
PFHxA	307-24-4	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 02:15	1
HFPO-DA	13252-13-6	ND	0.998	2.00	2.25		B0E0193	27-May-20	0.250 L	02-Jun-20 02:15	1
PFHpA	375-85-9	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 02:15	1
ADONA	919005-14-4	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 02:15	1
PFHxS	355-46-4	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 02:15	1
PFOA	335-67-1	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 02:15	1
PFNA	375-95-1	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 02:15	1
PFOS	1763-23-1	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 02:15	1
9Cl-PF3ONS	756426-58-1	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 02:15	1
PFDA	335-76-2	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 02:15	1
MeFOSAA	2355-31-9	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 02:15	1
EtFOSAA	2991-50-6	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 02:15	1
PFUnA	2058-94-8	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 02:15	1
PFDoA	307-55-1	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 02:15	1
PFTrDA	72629-94-8	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 02:15	1
11Cl-PF3OUdS	763051-92-9	ND	0.998	2.00	2.25		B0E0193	27-May-20	0.250 L	02-Jun-20 02:15	1
PFTeDA	376-06-7	ND	0.749	1.50	2.00		B0E0193	27-May-20	0.250 L	02-Jun-20 02:15	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	102	70 - 130			B0E0193	27-May-20	0.250 L	02-Jun-20 02:15	1	
13C2-PFDA	SURR	91.2	70 - 130			B0E0193	27-May-20	0.250 L	02-Jun-20 02:15	1	
d5-EtFOSAA	SURR	88.3	70 - 130			B0E0193	27-May-20	0.250 L	02-Jun-20 02:15	1	
13C3-HFPO-DA	SURR	99.6	70 - 130			B0E0193	27-May-20	0.250 L	02-Jun-20 02:15	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/1/20

Sample ID: WI-CV-3FB17-0520						EPA Method 537.1					
Client Data				Laboratory Data							
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	200114-11	Column:	BEH C18				
Project:	9000NVT3	Date Collected:	20-May-20 13:30	Date Received:	22-May-20 10:00						
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.756	1.51	2.02		B0E0193	27-May-20	0.248 L	02-Jun-20 02:26	1
PFHxA	307-24-4	ND	0.756	1.51	2.02		B0E0193	27-May-20	0.248 L	02-Jun-20 02:26	1
HFPO-DA	13252-13-6	ND	1.01	2.02	2.27		B0E0193	27-May-20	0.248 L	02-Jun-20 02:26	1
PFHpA	375-85-9	ND	0.756	1.51	2.02		B0E0193	27-May-20	0.248 L	02-Jun-20 02:26	1
ADONA	919005-14-4	ND	0.756	1.51	2.02		B0E0193	27-May-20	0.248 L	02-Jun-20 02:26	1
PFHxS	355-46-4	ND	0.756	1.51	2.02		B0E0193	27-May-20	0.248 L	02-Jun-20 02:26	1
PFOA	335-67-1	ND	0.756	1.51	2.02		B0E0193	27-May-20	0.248 L	02-Jun-20 02:26	1
PFNA	375-95-1	ND	0.756	1.51	2.02		B0E0193	27-May-20	0.248 L	02-Jun-20 02:26	1
PFOS	1763-23-1	ND	0.756	1.51	2.02		B0E0193	27-May-20	0.248 L	02-Jun-20 02:26	1
9CI-PFH3ONS	756426-58-1	ND	0.756	1.51	2.02		B0E0193	27-May-20	0.248 L	02-Jun-20 02:26	1
PFDA	335-76-2	ND	0.756	1.51	2.02		B0E0193	27-May-20	0.248 L	02-Jun-20 02:26	1
MeFOSAA	2355-31-9	ND	0.756	1.51	2.02		B0E0193	27-May-20	0.248 L	02-Jun-20 02:26	1
EtFOSAA	2991-50-6	ND	0.756	1.51	2.02		B0E0193	27-May-20	0.248 L	02-Jun-20 02:26	1
PFUnA	2058-94-8	ND	0.756	1.51	2.02		B0E0193	27-May-20	0.248 L	02-Jun-20 02:26	1
PFDoA	307-55-1	ND	0.756	1.51	2.02		B0E0193	27-May-20	0.248 L	02-Jun-20 02:26	1
PFTTrDA	72629-94-8	ND	0.756	1.51	2.02		B0E0193	27-May-20	0.248 L	02-Jun-20 02:26	1
11CI-PF3OUdS	763051-92-9	ND	1.01	2.02	2.27		B0E0193	27-May-20	0.248 L	02-Jun-20 02:26	1
PFTeDA	376-06-7	ND	0.756	1.51	2.02		B0E0193	27-May-20	0.248 L	02-Jun-20 02:26	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	98.7	70 - 130			B0E0193	27-May-20	0.248 L	02-Jun-20 02:26	1	
13C2-PFDA	SURR	90.3	70 - 130			B0E0193	27-May-20	0.248 L	02-Jun-20 02:26	1	
d5-EtFOSAA	SURR	90.5	70 - 130			B0E0193	27-May-20	0.248 L	02-Jun-20 02:26	1	
13C3-HFPO-DA	SURR	95.3	70 - 130			B0E0193	27-May-20	0.248 L	02-Jun-20 02:26	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

MW 7/1/20

Sample ID: WI-CV-1RW07-0520						EPA Method 537.1					
Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	200114-12	Column:	BEH C18			
Project:	9000NVT3	Date Collected:	20-May-20 13:10		Date Received:	22-May-20 10:00					
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	31.9	0.767	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:37	1
PFHxA	307-24-4	65.0	0.767	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:37	1
HFPO-DA	13252-13-6	ND	1.02	2.05	2.30		B0E0193	27-May-20	0.244 L	02-Jun-20 02:37	1
PFHpA	375-85-9	13.7	0.767	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:37	1
ADONA	919005-14-4	ND	0.767	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:37	1
PFHxS	355-46-4	72.0	0.767	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:37	1
PFOA	335-67-1	193	0.767	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:37	1
PFNA	375-95-1	ND	0.767	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:37	1
PFOS	1763-23-1	1.71	0.767	1.54	2.05	J	B0E0193	27-May-20	0.244 L	02-Jun-20 02:37	1
9CI-PF3ONS	756426-58-1	ND	0.767	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:37	1
PFDA	335-76-2	ND	0.767	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:37	1
MeFOSAA	2355-31-9	ND	0.767	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:37	1
EtFOSAA	2991-50-6	ND	0.767	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:37	1
PFUnA	2058-94-8	ND	0.767	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:37	1
PFDoA	307-55-1	ND	0.767	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:37	1
PFTTrDA	72629-94-8	ND	0.767	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:37	1
11CI-PF3OUdS	763051-92-9	ND	1.02	2.05	2.30		B0E0193	27-May-20	0.244 L	02-Jun-20 02:37	1
PFTeDA	376-06-7	ND	0.767	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:37	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	93.7	70 - 130			B0E0193	27-May-20	0.244 L	02-Jun-20 02:37	1	
13C2-PFDA	SURR	84.1	70 - 130			B0E0193	27-May-20	0.244 L	02-Jun-20 02:37	1	
d5-EtFOSAA	SURR	88.7	70 - 130			B0E0193	27-May-20	0.244 L	02-Jun-20 02:37	1	
13C3-HFPO-DA	SURR	93.3	70 - 130			B0E0193	27-May-20	0.244 L	02-Jun-20 02:37	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 7/1/20

Sample ID: WI-CV-1RW07P-0520						EPA Method 537.1					
Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	200114-13	Column:	BEH C18			
Project:	9000NVT3	Date Collected:	20-May-20 13:15		Date Received:	22-May-20 10:00					
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	34.4	0.743	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 02:48	1
PFHxA	307-24-4	74.1	0.743	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 02:48	1
HFPO-DA	13252-13-6	ND	0.990	1.98	2.23		B0E0193	27-May-20	0.252 L	02-Jun-20 02:48	1
PFHpA	375-85-9	16.2	0.743	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 02:48	1
ADONA	919005-14-4	ND	0.743	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 02:48	1
PFHxS	355-46-4	75.3	0.743	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 02:48	1
PFOA	335-67-1	221	0.743	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 02:48	1
PFNA	375-95-1	ND	0.743	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 02:48	1
PFOS	1763-23-1	1.70	0.743	1.49	1.98	J	B0E0193	27-May-20	0.252 L	02-Jun-20 02:48	1
9CI-PF3ONS	756426-58-1	ND	0.743	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 02:48	1
PFDA	335-76-2	ND	0.743	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 02:48	1
MeFOSAA	2355-31-9	ND	0.743	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 02:48	1
EtFOSAA	2991-50-6	ND	0.743	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 02:48	1
PFUnA	2058-94-8	ND	0.743	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 02:48	1
PFDoA	307-55-1	ND	0.743	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 02:48	1
PFTTrDA	72629-94-8	ND	0.743	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 02:48	1
11CI-PF3OUdS	763051-92-9	ND	0.990	1.98	2.23		B0E0193	27-May-20	0.252 L	02-Jun-20 02:48	1
PFTeDA	376-06-7	ND	0.743	1.49	1.98		B0E0193	27-May-20	0.252 L	02-Jun-20 02:48	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	98.8	70 - 130			B0E0193	27-May-20	0.252 L	02-Jun-20 02:48	1	
13C2-PFDA	SURR	97.5	70 - 130			B0E0193	27-May-20	0.252 L	02-Jun-20 02:48	1	
d5-EtFOSAA	SURR	87.9	70 - 130			B0E0193	27-May-20	0.252 L	02-Jun-20 02:48	1	
13C3-HFPO-DA	SURR	98.0	70 - 130			B0E0193	27-May-20	0.252 L	02-Jun-20 02:48	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 7/1/20

Sample ID: WI-CV-1FB07-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	200114-14	Column:	BEH C18
Project:	9000NVT3	Date Collected:	20-May-20 13:10	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:59	1
PFHxA	307-24-4	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:59	1
HFPO-DA	13252-13-6	ND	1.03	2.05	2.31		B0E0193	27-May-20	0.244 L	02-Jun-20 02:59	1
PFHpA	375-85-9	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:59	1
ADONA	919005-14-4	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:59	1
PFHxS	355-46-4	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:59	1
PFOA	335-67-1	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:59	1
PFNA	375-95-1	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:59	1
PFOS	1763-23-1	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:59	1
9CI-PF3ONS	756426-58-1	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:59	1
PFDA	335-76-2	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:59	1
MeFOSAA	2355-31-9	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:59	1
EtFOSAA	2991-50-6	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:59	1
PFUnA	2058-94-8	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:59	1
PFDoA	307-55-1	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:59	1
PFTTrDA	72629-94-8	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:59	1
11Cl-PF3OUdS	763051-92-9	ND	1.03	2.05	2.31		B0E0193	27-May-20	0.244 L	02-Jun-20 02:59	1
PFTeDA	376-06-7	ND	0.770	1.54	2.05		B0E0193	27-May-20	0.244 L	02-Jun-20 02:59	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	94.0		70 - 130			B0E0193	27-May-20	0.244 L	02-Jun-20 02:59	1
13C2-PFDA	SURR	87.7		70 - 130			B0E0193	27-May-20	0.244 L	02-Jun-20 02:59	1
d5-EtFOSAA	SURR	88.3		70 - 130			B0E0193	27-May-20	0.244 L	02-Jun-20 02:59	1
13C3-HFPO-DA	SURR	95.1		70 - 130			B0E0193	27-May-20	0.244 L	02-Jun-20 02:59	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

new 7/1/20

**DATA VALIDATION SUMMARY REPORT
NAS WHIDBEY ISLAND, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon
 SDG: 2001115
 Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
 Site: NAS Whidbey Island, Residential Wells, CTO-4041, Washington
 Date: July 1, 2020

PFAS			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-AF-1RW01-0520	2001115-01	Water
2	WI-AF-1FB01-0520	2001115-02	Water
3	WI-A06-RW05-0520	2001115-03	Water
3MS	WI-A06-RW05-0520MS	2001115-03MS	Water
3MSD	WI-A06-RW05-0520MSD	2001115-03MSD	Water
4	WI-A06-FB05-0520	2001115-04	Water
5	WI-AF-1RW32-0520	2001115-05	Water
6	WI-AF-1FB32-0520	2001115-06	Water
7	WI-A06-RW03-0520	2001115-07	Water
8	WI-A06-RW03P-0520	2001115-08	Water
9	WI-A06-FB03-0520	2001115-09	Water
10	WI-AF-1RW12-0520	2001115-10	Water
11	WI-AF-1RW12P-0520	2001115-11	Water
12	WI-AF-1FB12-0520	2001115-12	Water
13	WI-AF-1RW68-0520	2001115-13	Water
14	WI-AF-1FB68-0520	2001115-14	Water
15	WI-AF-1RW40-0520	2001115-15	Water
16	WI-AF-1FB40-0520	2001115-16	Water

A full data validation was performed on the analytical data for nine water samples and seven aqueous field blank samples collected on May 19, 2020 by CH2M Hill at the NAS Whidbey Island site in Washington. The samples were analyzed under the EPA Method “Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)”.

Specific method references are as follows:

Analysis
PFAS

Method References
USEPA Method 537.1

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, DoD Final General Data Validation Guidelines, November 2019, and the USEPA Data Review and Validation Guidelines as follows:

- The USEPA “Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537,” November 2018;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 100% of the detected results in the samples.

Data Usability Assessment

There were no serious deficiencies of data.

The data are acceptable for the intended purposes. There were no qualifications.

Perfluorinated Alkyl Substances (PFAS)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC sample results are summarized in the table below.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WI-AF-1FB01-0520	None - ND	-	-	-
WI-A06-FB05-0520	None - ND	-	-	-
WI-AF-1FB32-0520	None - ND	-	-	-
WI-A06-FB03-0520	None - ND	-	-	-
WI-AF-1FB12-0520	None - ND	-	-	-
WI-AF-1FB68-0520	None - ND	-	-	-
WI-AF-1FB40-0520	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD samples exhibited acceptable percent recoveries (%R) and RPD values except for the following.

EDS Sample ID	Compound	MS %R/MSD %R/RDP	Qualifier
3	PFHxS	OK/OK/59.3	None for RPD alone

Laboratory Control Samples (LCS)

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- EDS Sample 5 was analyzed at various dilutions due to high concentrations of target compounds. The reporting limits were adjusted accordingly. No action was required.

Field Duplicate Sample Precision

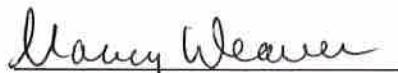
- Field duplicate results are summarized below. The precision was acceptable.

Compound	WI-A06-RW03-0520 ng/L	WI-A06-RW03P-0520 ng/L	RPD	Qualifier
PFBS	37.2	37.6	1%	None
PFHxA	59.2	58.7	1%	
PFHpA	20.6	19.8	4%	
PFHxS	103	106	3%	
PFOA	33.2	32.0	4%	
PFOS	13.7	12.8	7%	

Compound	WI-AF-1RW12-0520 ng/L	WI-AF-1RW12P-0520 ng/L	RPD	Qualifier
PFBS	4.20	4.24	1%	None
PFHxA	2.35	2.40	2%	
PFHpA	2.02	1.72	16%	
PFHxS	1.68	1.44	15%	
PFOA	5.70	5.25	8%	
PFOS	2.19	2.22	1%	

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed:



Nancy Weaver
Senior Chemist

Dated: 7/6/20

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

Sample ID: WI-AF-1RW01-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001115-01	Column:	BEH C18
Project:	9000NVT3	Date Collected:	19-May-20 13:10	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 20:43	1
PFHxA	307-24-4	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 20:43	1
HFPO-DA	13252-13-6	ND	1.02	2.03	2.29		B0E0194	27-May-20	0.246 L	01-Jun-20 20:43	1
PFHpA	375-85-5	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 20:43	1
ADONA	919005-14-4	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 20:43	1
PFHxS	355-46-4	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 20:43	1
PFOA	335-67-1	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 20:43	1
PFNA	375-95-1	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 20:43	1
PFOS	1763-23-1	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 20:43	1
9CI-PF3ONS	756426-58-1	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 20:43	1
PFDA	335-76-2	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 20:43	1
MeFOSAA	2355-31-9	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 20:43	1
EtFOSAA	2991-50-6	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 20:43	1
PFUnA	2058-94-8	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 20:43	1
PFDoA	307-55-1	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 20:43	1
PFTTrDA	72629-94-8	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 20:43	1
11CI-PF3OUdS	763051-92-9	ND	1.02	2.03	2.29		B0E0194	27-May-20	0.246 L	01-Jun-20 20:43	1
PFTeDA	376-06-7	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 20:43	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130		B0E0194	27-May-20	0.246 L	01-Jun-20 20:43	1
13C2-PFDA	SURR	94.3	70 - 130		B0E0194	27-May-20	0.246 L	01-Jun-20 20:43	1
d5-EtFOSAA	SURR	96.4	70 - 130		B0E0194	27-May-20	0.246 L	01-Jun-20 20:43	1
13C3-HFPO-DA	SURR	99.8	70 - 130		B0E0194	27-May-20	0.246 L	01-Jun-20 20:43	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 7/1/20

Sample ID: WI-AF-1FB01-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001115-02	Column:	BEH C18
Project:	9000NVT3	Date Collected:	19-May-20 13:10	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.735	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 20:54	1
PFHxA	307-24-4	ND	0.735	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 20:54	1
HFPO-DA	13252-13-6	ND	0.979	1.96	2.20		B0E0194	27-May-20	0.255 L	01-Jun-20 20:54	1
PFHpA	375-85-9	ND	0.735	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 20:54	1
ADONA	919005-14-4	ND	0.735	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 20:54	1
PFHxS	355-46-4	ND	0.735	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 20:54	1
PFOA	335-67-1	ND	0.735	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 20:54	1
PFNA	375-95-1	ND	0.735	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 20:54	1
PFOS	1763-23-1	ND	0.735	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 20:54	1
9CI-PF3ONS	756426-58-1	ND	0.735	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 20:54	1
PFDA	335-76-2	ND	0.735	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 20:54	1
MeFOSAA	2355-31-9	ND	0.735	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 20:54	1
EtFOSAA	2991-50-6	ND	0.735	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 20:54	1
PFUnA	2058-94-3	ND	0.735	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 20:54	1
PFDoA	307-55-1	ND	0.735	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 20:54	1
PFTTrDA	72629-94-8	ND	0.735	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 20:54	1
11CI-PF3OUdS	763051-92-9	ND	0.979	1.96	2.20		B0E0194	27-May-20	0.255 L	01-Jun-20 20:54	1
PFTeDA	376-06-7	ND	0.735	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 20:54	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130		B0E0194	27-May-20	0.255 L	01-Jun-20 20:54	1
13C2-PFDA	SURR	99.0	70 - 130		B0E0194	27-May-20	0.255 L	01-Jun-20 20:54	1
d5-EtFOSAA	SURR	90.7	70 - 130		B0E0194	27-May-20	0.255 L	01-Jun-20 20:54	1
13C3-HFPO-DA	SURR	103	70 - 130		B0E0194	27-May-20	0.255 L	01-Jun-20 20:54	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/1/20

Sample ID: WI-A06-RW05-0520

EPA Method 537.1

Client Data					Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	2001115-03	Column:	BEH C18	
Project:	9000NVT3	Date Collected:	19-May-20 15:05		Date Received:	22-May-20 10:00			
Location:	Drinking Water								

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	21.3	0.747	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 21:05	1
PFHxA	307-24-4	51.6	0.747	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 21:05	1
HFPO-DA	13252-13-6	ND	0.996	1.99	2.24		B0E0194	27-May-20	0.251 L	01-Jun-20 21:05	1
PFHpA	375-85-9	18.2	0.747	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 21:05	1
ADONA	919005-14-4	ND	0.747	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 21:05	1
PFHxS	355-46-4	160	0.747	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 21:05	1
PFOA	335-67-1	56.2	0.747	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 21:05	1
PFNA	375-95-1	0.934	0.747	1.49	1.99	J	B0E0194	27-May-20	0.251 L	01-Jun-20 21:05	1
PFOS	1763-23-1	56.2	0.747	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 21:05	1
9CI-PF3ONS	756426-58-1	ND	0.747	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 21:05	1
PFDA	335-76-2	ND	0.747	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 21:05	1
MeFOSAA	2355-31-9	ND	0.747	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 21:05	1
EtFOSAA	2991-50-6	ND	0.747	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 21:05	1
PFUnA	2058-94-8	ND	0.747	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 21:05	1
PFDoA	307-55-1	ND	0.747	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 21:05	1
PFTTrDA	72629-94-8	ND	0.747	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 21:05	1
11CI-PF3OUdS	763051-92-9	ND	0.996	1.99	2.24		B0E0194	27-May-20	0.251 L	01-Jun-20 21:05	1
PFTeDA	376-06-7	ND	0.747	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 21:05	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	97.4	70 - 130		B0E0194	27-May-20	0.251 L	01-Jun-20 21:05	1
13C2-PFDA	SURR	91.3	70 - 130		B0E0194	27-May-20	0.251 L	01-Jun-20 21:05	1
d5-EtFOSAA	SURR	95.7	70 - 130		B0E0194	27-May-20	0.251 L	01-Jun-20 21:05	1
13C3-HFPO-DA	SURR	96.5	70 - 130		B0E0194	27-May-20	0.251 L	01-Jun-20 21:05	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

rw 7/1/20

Sample ID: WI-A06-FB05-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	200115-04	Column:	BEH C18
Project:	9000NVT3	Date Collected:	19-May-20 15:05	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.737	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 21:16	1
PFHxA	307-24-4	ND	0.737	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 21:16	1
HFPO-DA	13252-13-6	ND	0.982	1.96	2.21		B0E0194	27-May-20	0.255 L	01-Jun-20 21:16	1
PFHpA	375-85-9	ND	0.737	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 21:16	1
ADONA	919005-14-4	ND	0.737	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 21:16	1
PFHxS	355-46-4	ND	0.737	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 21:16	1
PFOA	335-67-1	ND	0.737	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 21:16	1
PFNA	375-95-1	ND	0.737	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 21:16	1
PFOS	1763-23-1	ND	0.737	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 21:16	1
9CI-PF3ONS	756426-58-1	ND	0.737	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 21:16	1
PFDA	335-76-2	ND	0.737	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 21:16	1
MeFOSAA	2355-31-9	ND	0.737	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 21:16	1
EtFOSAA	2991-50-6	ND	0.737	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 21:16	1
PFUnA	2058-94-8	ND	0.737	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 21:16	1
PFDoA	307-55-1	ND	0.737	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 21:16	1
PFTrDA	72629-94-8	ND	0.737	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 21:16	1
11CI-PF3OUdS	763051-92-9	ND	0.982	1.96	2.21		B0E0194	27-May-20	0.255 L	01-Jun-20 21:16	1
PFTeDA	376-06-7	ND	0.737	1.47	1.96		B0E0194	27-May-20	0.255 L	01-Jun-20 21:16	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	102	70 - 130			B0E0194	27-May-20	0.255 L	01-Jun-20 21:16	1	
13C2-PFDA	SURR	92.8	70 - 130			B0E0194	27-May-20	0.255 L	01-Jun-20 21:16	1	
d5-EtFOSAA	SURR	96.3	70 - 130			B0E0194	27-May-20	0.255 L	01-Jun-20 21:16	1	
13C3-HFPO-DA	SURR	98.8	70 - 130			B0E0194	27-May-20	0.255 L	01-Jun-20 21:16	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw 7/1/20

Sample ID: WI-AF-1RW32-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001115-05	Column:	BEH C18
Project:	9000NVT3	Date Collected:	19-May-20 08:55	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	1050	23.1	46.1	61.5	Ø	B0E0194	27-May-20	0.244 L	04-Jun-20 20:31	30
PFHxA	307-24-4	626	23.1	46.1	61.5	Ø	B0E0194	27-May-20	0.244 L	04-Jun-20 20:31	30
HFPO-DA	13252-13-6	ND	1.02	2.05	2.31		B0E0194	27-May-20	0.244 L	01-Jun-20 21:27	1
PFHpA	375-85-9	83.7	0.769	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 21:27	1
ADONA	919005-14-4	ND	0.769	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 21:27	1
PFHxS	355-46-4	9620	76.9	154	205	Ø	B0E0194	27-May-20	0.244 L	04-Jun-20 20:20	100
PFOA	335-67-1	231	0.769	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 21:27	1
PFNA	375-95-1	2.17	0.769	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 21:27	1
PFOS	1763-23-1	36300	76.9	154	205	Ø	B0E0194	27-May-20	0.244 L	04-Jun-20 20:20	100
9CI-PF3ONS	756426-58-1	ND	0.769	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 21:27	1
PFDA	335-76-2	0.812	0.769	1.54	2.05	J	B0E0194	27-May-20	0.244 L	01-Jun-20 21:27	1
MeFOSAA	2355-31-9	ND	0.769	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 21:27	1
EtFOSAA	2991-50-6	ND	0.769	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 21:27	1
PFUnA	2058-94-8	ND	0.769	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 21:27	1
PFDoA	307-55-1	ND	0.769	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 21:27	1
PFTrDA	72629-94-8	ND	0.769	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 21:27	1
11CI-PF3OUdS	763051-92-9	ND	1.02	2.05	2.31		B0E0194	27-May-20	0.244 L	01-Jun-20 21:27	1
PFTeDA	376-06-7	ND	0.769	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 21:27	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	80.6	70 - 130	Ø	B0E0194	27-May-20	0.244 L	04-Jun-20 20:31	30
13C2-PFDA	SURR	98.2	70 - 130		B0E0194	27-May-20	0.244 L	01-Jun-20 21:27	1
d5-EtFOSAA	SURR	87.4	70 - 130		B0E0194	27-May-20	0.244 L	01-Jun-20 21:27	1
13C3-HFPO-DA	SURR	104	70 - 130		B0E0194	27-May-20	0.244 L	01-Jun-20 21:27	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of Quantitation

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

nw 7/1/20

Sample ID: WI-AF-1FB32-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001115-06	Column:	BEH C18
Project:	9000NV3	Date Collected:	19-May-20 08:55	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.741	1.48	1.98		B0E0194	27-May-20	0.253 L	01-Jun-20 21:38	1
PFHxA	307-24-4	ND	0.741	1.48	1.98		B0E0194	27-May-20	0.253 L	01-Jun-20 21:38	1
HFPO-DA	13252-13-6	ND	0.988	1.98	2.22		B0E0194	27-May-20	0.253 L	01-Jun-20 21:38	1
PFHpA	375-85-9	ND	0.741	1.48	1.98		B0E0194	27-May-20	0.253 L	01-Jun-20 21:38	1
ADONA	919005-14-4	ND	0.741	1.48	1.98		B0E0194	27-May-20	0.253 L	01-Jun-20 21:38	1
PFHxS	355-46-4	ND	0.741	1.48	1.98		B0E0194	27-May-20	0.253 L	01-Jun-20 21:38	1
PFOA	335-67-1	ND	0.741	1.48	1.98		B0E0194	27-May-20	0.253 L	01-Jun-20 21:38	1
PFNA	375-95-1	ND	0.741	1.48	1.98		B0E0194	27-May-20	0.253 L	01-Jun-20 21:38	1
PFOS	1763-23-1	ND	0.741	1.48	1.98		B0E0194	27-May-20	0.253 L	01-Jun-20 21:38	1
9CI-PF3ONS	756426-58-1	ND	0.741	1.48	1.98		B0E0194	27-May-20	0.253 L	01-Jun-20 21:38	1
PFDA	335-76-2	ND	0.741	1.48	1.98		B0E0194	27-May-20	0.253 L	01-Jun-20 21:38	1
MeFOSAA	2355-31-9	ND	0.741	1.48	1.98		B0E0194	27-May-20	0.253 L	01-Jun-20 21:38	1
EtFOSAA	2991-50-6	ND	0.741	1.48	1.98		B0E0194	27-May-20	0.253 L	01-Jun-20 21:38	1
PFUnA	2058-94-3	ND	0.741	1.48	1.98		B0E0194	27-May-20	0.253 L	01-Jun-20 21:38	1
PFDoA	307-55-1	ND	0.741	1.48	1.98		B0E0194	27-May-20	0.253 L	01-Jun-20 21:38	1
PFTTrDA	72629-94-8	ND	0.741	1.48	1.98		B0E0194	27-May-20	0.253 L	01-Jun-20 21:38	1
11CI-PF3OUdS	763051-92-9	ND	0.988	1.98	2.22		B0E0194	27-May-20	0.253 L	01-Jun-20 21:38	1
PFTeDA	376-06-7	ND	0.741	1.48	1.98		B0E0194	27-May-20	0.253 L	01-Jun-20 21:38	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130		B0E0194	27-May-20	0.253 L	01-Jun-20 21:38	1
13C2-PFDA	SURR	92.6	70 - 130		B0E0194	27-May-20	0.253 L	01-Jun-20 21:38	1
d5-EtFOSAA	SURR	94.0	70 - 130		B0E0194	27-May-20	0.253 L	01-Jun-20 21:38	1
13C3-HFPO-DA	SURR	104	70 - 130		B0E0194	27-May-20	0.253 L	01-Jun-20 21:38	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw 7/1/20

Sample ID: WI-A06-RW03-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001115-07	Column:	BEH C18
Project:	9000NVT3	Date Collected:	19-May-20 16:10	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	37.2	0.745	1.49	1.99		B0E0194	27-May-20	0.252 L	01-Jun-20 21:49	1
PFHxA	307-24-4	59.2	0.745	1.49	1.99		B0E0194	27-May-20	0.252 L	01-Jun-20 21:49	1
HFPO-DA	13252-13-6	ND	0.993	1.98	2.23		B0E0194	27-May-20	0.252 L	01-Jun-20 21:49	1
PFHpA	375-85-5	20.6	0.745	1.49	1.99		B0E0194	27-May-20	0.252 L	01-Jun-20 21:49	1
ADONA	919005-14-4	ND	0.745	1.49	1.99		B0E0194	27-May-20	0.252 L	01-Jun-20 21:49	1
PFHxS	355-46-4	103	0.745	1.49	1.99		B0E0194	27-May-20	0.252 L	01-Jun-20 21:49	1
PFOA	335-67-1	33.2	0.745	1.49	1.99		B0E0194	27-May-20	0.252 L	01-Jun-20 21:49	1
PFNA	375-95-1	ND	0.745	1.49	1.99		B0E0194	27-May-20	0.252 L	01-Jun-20 21:49	1
PFOS	1763-23-1	13.7	0.745	1.49	1.99		B0E0194	27-May-20	0.252 L	01-Jun-20 21:49	1
9CI-PF3ONS	756426-58-1	ND	0.745	1.49	1.99		B0E0194	27-May-20	0.252 L	01-Jun-20 21:49	1
PFDA	335-76-2	ND	0.745	1.49	1.99		B0E0194	27-May-20	0.252 L	01-Jun-20 21:49	1
MeFOSAA	2355-31-9	ND	0.745	1.49	1.99		B0E0194	27-May-20	0.252 L	01-Jun-20 21:49	1
EtFOSAA	2991-50-6	ND	0.745	1.49	1.99		B0E0194	27-May-20	0.252 L	01-Jun-20 21:49	1
PFUnA	2058-94-3	ND	0.745	1.49	1.99		B0E0194	27-May-20	0.252 L	01-Jun-20 21:49	1
PFDoA	307-55-1	ND	0.745	1.49	1.99		B0E0194	27-May-20	0.252 L	01-Jun-20 21:49	1
PFTTrDA	72629-94-8	ND	0.745	1.49	1.99		B0E0194	27-May-20	0.252 L	01-Jun-20 21:49	1
11CI-PF3OUdS	763051-92-9	ND	0.993	1.98	2.23		B0E0194	27-May-20	0.252 L	01-Jun-20 21:49	1
PFTeDA	376-06-7	ND	0.745	1.49	1.99		B0E0194	27-May-20	0.252 L	01-Jun-20 21:49	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	95.3	70 - 130		B0E0194	27-May-20	0.252 L	01-Jun-20 21:49	1
13C2-PFDA	SURR	88.5	70 - 130		B0E0194	27-May-20	0.252 L	01-Jun-20 21:49	1
d5-EtFOSAA	SURR	92.3	70 - 130		B0E0194	27-May-20	0.252 L	01-Jun-20 21:49	1
13C3-HFPO-DA	SURR	98.6	70 - 130		B0E0194	27-May-20	0.252 L	01-Jun-20 21:49	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

02/11/20

Sample ID: WI-A06-RW03P-0520						EPA Method 537.1					
Client Data				Laboratory Data							
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001115-08	Column:	BEH C18				
Project:	9000NVT3	Date Collected:	19-May-20 16:15	Date Received:	22-May-20 10:00						
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	37.6	0.770	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 22:00	1
PFHxA	307-24-4	58.7	0.770	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 22:00	1
HFPO-DA	13252-13-6	ND	1.03	2.05	2.31		B0E0194	27-May-20	0.244 L	01-Jun-20 22:00	1
PFHpA	375-85-9	19.8	0.770	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 22:00	1
ADONA	919005-14-4	ND	0.770	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 22:00	1
PFHxS	355-46-4	106	0.770	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 22:00	1
PFOA	335-67-1	32.0	0.770	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 22:00	1
PFNA	375-95-1	ND	0.770	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 22:00	1
PFOS	1763-23-1	12.8	0.770	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 22:00	1
9CI-PF3ONS	756426-58-1	ND	0.770	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 22:00	1
PFDA	335-76-2	ND	0.770	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 22:00	1
MeFOSAA	2355-31-9	ND	0.770	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 22:00	1
EtFOSAA	2991-50-6	ND	0.770	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 22:00	1
PFUnA	2058-94-8	ND	0.770	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 22:00	1
PFDoA	307-55-1	ND	0.770	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 22:00	1
PFTTrDA	72629-94-8	ND	0.770	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 22:00	1
11CI-PF3OUdS	763051-92-9	ND	1.03	2.05	2.31		B0E0194	27-May-20	0.244 L	01-Jun-20 22:00	1
PFTeDA	376-06-7	ND	0.770	1.54	2.05		B0E0194	27-May-20	0.244 L	01-Jun-20 22:00	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	101	70 - 130			B0E0194	27-May-20	0.244 L	01-Jun-20 22:00	1	
13C2-PFDA	SURR	91.9	70 - 130			B0E0194	27-May-20	0.244 L	01-Jun-20 22:00	1	
d5-EtFOSAA	SURR	90.8	70 - 130			B0E0194	27-May-20	0.244 L	01-Jun-20 22:00	1	
13C3-HFPO-DA	SURR	100	70 - 130			B0E0194	27-May-20	0.244 L	01-Jun-20 22:00	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw 7/1/20

Sample ID: WI-A06-FB03-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	200115-09	Column:	BEH C18
Project:	9000NVT3	Date Collected:	19-May-20 16:10	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.750	1.50	2.00		B0E0194	27-May-20	0.250 L	01-Jun-20 22:12	1
PFHxA	307-24-4	ND	0.750	1.50	2.00		B0E0194	27-May-20	0.250 L	01-Jun-20 22:12	1
HFPO-DA	13252-13-6	ND	1.00	2.00	2.25		B0E0194	27-May-20	0.250 L	01-Jun-20 22:12	1
PFHpA	375-85-9	ND	0.750	1.50	2.00		B0E0194	27-May-20	0.250 L	01-Jun-20 22:12	1
ADONA	919005-14-4	ND	0.750	1.50	2.00		B0E0194	27-May-20	0.250 L	01-Jun-20 22:12	1
PFHxS	355-46-4	ND	0.750	1.50	2.00		B0E0194	27-May-20	0.250 L	01-Jun-20 22:12	1
PFOA	335-67-1	ND	0.750	1.50	2.00		B0E0194	27-May-20	0.250 L	01-Jun-20 22:12	1
PFNA	375-95-1	ND	0.750	1.50	2.00		B0E0194	27-May-20	0.250 L	01-Jun-20 22:12	1
PFOS	1763-23-1	ND	0.750	1.50	2.00		B0E0194	27-May-20	0.250 L	01-Jun-20 22:12	1
9CI-PF3ONS	756426-58-1	ND	0.750	1.50	2.00		B0E0194	27-May-20	0.250 L	01-Jun-20 22:12	1
PFDA	335-76-2	ND	0.750	1.50	2.00		B0E0194	27-May-20	0.250 L	01-Jun-20 22:12	1
MeFOSAA	2355-31-9	ND	0.750	1.50	2.00		B0E0194	27-May-20	0.250 L	01-Jun-20 22:12	1
EtFOSAA	2991-50-5	ND	0.750	1.50	2.00		B0E0194	27-May-20	0.250 L	01-Jun-20 22:12	1
PFUnA	2058-94-3	ND	0.750	1.50	2.00		B0E0194	27-May-20	0.250 L	01-Jun-20 22:12	1
PFDaA	307-55-1	ND	0.750	1.50	2.00		B0E0194	27-May-20	0.250 L	01-Jun-20 22:12	1
PFTrDA	72629-94-8	ND	0.750	1.50	2.00		B0E0194	27-May-20	0.250 L	01-Jun-20 22:12	1
11CI-PF3OUdS	763051-92-9	ND	1.00	2.00	2.25		B0E0194	27-May-20	0.250 L	01-Jun-20 22:12	1
PFTeDA	376-06-7	ND	0.750	1.50	2.00		B0E0194	27-May-20	0.250 L	01-Jun-20 22:12	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	99.9	70 - 130			B0E0194	27-May-20	0.250 L	01-Jun-20 22:12	1	
13C2-PFDA	SURR	94.5	70 - 130			B0E0194	27-May-20	0.250 L	01-Jun-20 22:12	1	
d5-EtFOSAA	SURR	94.3	70 - 130			B0E0194	27-May-20	0.250 L	01-Jun-20 22:12	1	
13C3-HFPO-DA	SURR	101	70 - 130			B0E0194	27-May-20	0.250 L	01-Jun-20 22:12	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

MW 7/1/20

Sample ID: WI-AF-1RW12-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001115-10	Column:	BEH C18
Project:	9000NVT3	Date Collected:	19-May-20 11:10	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	4.20	0.779	1.56	2.08		B0E0194	27-May-20	0.241 L	01-Jun-20 22:23	1
PFHxA	307-24-4	2.35	0.779	1.56	2.08		B0E0194	27-May-20	0.241 L	01-Jun-20 22:23	1
HFPO-DA	13252-13-6	ND	1.04	2.07	2.34		B0E0194	27-May-20	0.241 L	01-Jun-20 22:23	1
PFHpA	375-85-9	2.02	0.779	1.56	2.08	J	B0E0194	27-May-20	0.241 L	01-Jun-20 22:23	1
ADONA	919005-14-4	ND	0.779	1.56	2.08		B0E0194	27-May-20	0.241 L	01-Jun-20 22:23	1
PFHxS	355-46-4	1.68	0.779	1.56	2.08	J	B0E0194	27-May-20	0.241 L	01-Jun-20 22:23	1
PFOA	335-67-1	5.70	0.779	1.56	2.08		B0E0194	27-May-20	0.241 L	01-Jun-20 22:23	1
PFNA	375-95-1	ND	0.779	1.56	2.08		B0E0194	27-May-20	0.241 L	01-Jun-20 22:23	1
PFOS	1763-23-1	2.19	0.779	1.56	2.08		B0E0194	27-May-20	0.241 L	01-Jun-20 22:23	1
9CI-PF3ONS	756426-58-1	ND	0.779	1.56	2.08		B0E0194	27-May-20	0.241 L	01-Jun-20 22:23	1
PFDA	335-76-2	ND	0.779	1.56	2.08		B0E0194	27-May-20	0.241 L	01-Jun-20 22:23	1
MeFOSAA	2355-31-9	ND	0.779	1.56	2.08		B0E0194	27-May-20	0.241 L	01-Jun-20 22:23	1
EtFOSAA	2991-50-6	ND	0.779	1.56	2.08		B0E0194	27-May-20	0.241 L	01-Jun-20 22:23	1
PFUnA	2058-94-8	ND	0.779	1.56	2.08		B0E0194	27-May-20	0.241 L	01-Jun-20 22:23	1
PFDoA	307-55-1	ND	0.779	1.56	2.08		B0E0194	27-May-20	0.241 L	01-Jun-20 22:23	1
PFTTrDA	72629-94-8	ND	0.779	1.56	2.08		B0E0194	27-May-20	0.241 L	01-Jun-20 22:23	1
11CI-PF3OUdS	763051-92-9	ND	1.04	2.07	2.34		B0E0194	27-May-20	0.241 L	01-Jun-20 22:23	1
PFTeDA	376-06-7	ND	0.779	1.56	2.08		B0E0194	27-May-20	0.241 L	01-Jun-20 22:23	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130		B0E0194	27-May-20	0.241 L	01-Jun-20 22:23	1
13C2-PFDA	SURR	98.7	70 - 130		B0E0194	27-May-20	0.241 L	01-Jun-20 22:23	1
d5-EtFOSAA	SURR	92.3	70 - 130		B0E0194	27-May-20	0.241 L	01-Jun-20 22:23	1
13C3-HFPO-DA	SURR	105	70 - 130		B0E0194	27-May-20	0.241 L	01-Jun-20 22:23	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw 7/1/20

Sample ID: WI-AF-1RW12P-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001115-11	Column:	BEH C18
Project:	9000NVT3	Date Collected:	19-May-20 11:15	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	4.24	0.740	1.48	1.97		B0E0194	27-May-20	0.253 L	01-Jun-20 22:34	1
PFHxA	307-24-4	2.40	0.740	1.48	1.97		B0E0194	27-May-20	0.253 L	01-Jun-20 22:34	1
HFPO-DA	13252-13-6	ND	0.987	1.98	2.22		B0E0194	27-May-20	0.253 L	01-Jun-20 22:34	1
PFHpA	375-85-9	1.72	0.740	1.48	1.97	J	B0E0194	27-May-20	0.253 L	01-Jun-20 22:34	1
ADONA	919005-14-4	ND	0.740	1.48	1.97		B0E0194	27-May-20	0.253 L	01-Jun-20 22:34	1
PFHxS	355-46-4	1.44	0.740	1.48	1.97	J	B0E0194	27-May-20	0.253 L	01-Jun-20 22:34	1
PFOA	335-67-1	5.25	0.740	1.48	1.97		B0E0194	27-May-20	0.253 L	01-Jun-20 22:34	1
PFNA	375-95-1	ND	0.740	1.48	1.97		B0E0194	27-May-20	0.253 L	01-Jun-20 22:34	1
PFOS	1763-23-1	2.22	0.740	1.48	1.97		B0E0194	27-May-20	0.253 L	01-Jun-20 22:34	1
9CI-PF3ONS	756426-58-1	ND	0.740	1.48	1.97		B0E0194	27-May-20	0.253 L	01-Jun-20 22:34	1
PFDA	335-76-2	ND	0.740	1.48	1.97		B0E0194	27-May-20	0.253 L	01-Jun-20 22:34	1
MeFOSAA	2355-31-9	ND	0.740	1.48	1.97		B0E0194	27-May-20	0.253 L	01-Jun-20 22:34	1
EtFOSAA	2991-50-6	ND	0.740	1.48	1.97		B0E0194	27-May-20	0.253 L	01-Jun-20 22:34	1
PFUnA	2058-94-8	ND	0.740	1.48	1.97		B0E0194	27-May-20	0.253 L	01-Jun-20 22:34	1
PFDoA	307-55-1	ND	0.740	1.48	1.97		B0E0194	27-May-20	0.253 L	01-Jun-20 22:34	1
PFTTrDA	72629-94-8	ND	0.740	1.48	1.97		B0E0194	27-May-20	0.253 L	01-Jun-20 22:34	1
11CI-PF3OUdS	763051-92-9	ND	0.987	1.98	2.22		B0E0194	27-May-20	0.253 L	01-Jun-20 22:34	1
PFTeDA	376-06-7	ND	0.740	1.48	1.97		B0E0194	27-May-20	0.253 L	01-Jun-20 22:34	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130		B0E0194	27-May-20	0.253 L	01-Jun-20 22:34	1
13C2-PFDA	SURR	90.9	70 - 130		B0E0194	27-May-20	0.253 L	01-Jun-20 22:34	1
d5-EtFOSAA	SURR	105	70 - 130		B0E0194	27-May-20	0.253 L	01-Jun-20 22:34	1
13C3-HFPO-DA	SURR	102	70 - 130		B0E0194	27-May-20	0.253 L	01-Jun-20 22:34	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/1/20

Sample ID: WI-AF-1FB12-0520						EPA Method 537.1					
Client Data				Laboratory Data							
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001115-12	Column:	BEH C18				
Project:	9000NVT3	Date Collected:	19-May-20 11:10	Date Received:	22-May-20 10:00						
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.746	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 22:45	1
PFHxA	307-24-4	ND	0.746	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 22:45	1
HFPO-DA	13252-13-6	ND	0.994	1.99	2.24		B0E0194	27-May-20	0.251 L	01-Jun-20 22:45	1
PFHpA	375-85-9	ND	0.746	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 22:45	1
ADONA	919005-14-4	ND	0.746	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 22:45	1
PFHxS	355-46-4	ND	0.746	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 22:45	1
PFOA	335-67-1	ND	0.746	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 22:45	1
PFNA	375-95-1	ND	0.746	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 22:45	1
PFOS	1763-23-1	ND	0.746	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 22:45	1
9Cl-PF3ONS	756426-58-1	ND	0.746	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 22:45	1
PFDA	335-76-2	ND	0.746	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 22:45	1
MeFOSAA	2355-31-9	ND	0.746	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 22:45	1
EtFOSAA	2991-50-6	ND	0.746	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 22:45	1
PFUnA	2058-94-8	ND	0.746	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 22:45	1
PFDoA	307-55-1	ND	0.746	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 22:45	1
PFTTrDA	72629-94-8	ND	0.746	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 22:45	1
11Cl-PF3OUdS	763051-92-9	ND	0.994	1.99	2.24		B0E0194	27-May-20	0.251 L	01-Jun-20 22:45	1
PFTeDA	376-06-7	ND	0.746	1.49	1.99		B0E0194	27-May-20	0.251 L	01-Jun-20 22:45	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	107	70 - 130			B0E0194	27-May-20	0.251 L	01-Jun-20 22:45	1	
13C2-PFDA	SURR	99.6	70 - 130			B0E0194	27-May-20	0.251 L	01-Jun-20 22:45	1	
d5-EtFOSAA	SURR	101	70 - 130			B0E0194	27-May-20	0.251 L	01-Jun-20 22:45	1	
13C3-HFPO-DA	SURR	107	70 - 130			B0E0194	27-May-20	0.251 L	01-Jun-20 22:45	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw 7/1/20

Sample ID: WI-AF-1RW68-0520						EPA Method 537.1					
Client Data				Laboratory Data							
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001115-13	Column:	BEH C18				
Project:	9000NVT3	Date Collected:	19-May-20 14:10	Date Received:	22-May-20 10:00						
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.786	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 22:56	1
PFHxA	307-24-4	ND	0.786	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 22:56	1
HFPO-DA	13252-13-6	ND	1.05	2.09	2.36		B0E0194	27-May-20	0.239 L	01-Jun-20 22:56	1
PFHpA	375-85-9	ND	0.786	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 22:56	1
ADONA	919005-14-4	ND	0.786	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 22:56	1
PFHxS	355-46-4	ND	0.786	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 22:56	1
PFOA	335-67-1	ND	0.786	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 22:56	1
PFNA	375-95-1	ND	0.786	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 22:56	1
PFOS	1763-23-1	ND	0.786	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 22:56	1
9CI-PF3ONS	756426-58-1	ND	0.786	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 22:56	1
PFDA	335-76-2	ND	0.786	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 22:56	1
MeFOSAA	2355-31-9	ND	0.786	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 22:56	1
EtFOSAA	2991-50-6	ND	0.786	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 22:56	1
PFUnA	2058-94-8	ND	0.786	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 22:56	1
PFDoA	307-55-1	ND	0.786	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 22:56	1
PFTTrDA	72629-94-8	ND	0.786	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 22:56	1
11CI-PF3OUdS	763051-92-9	ND	1.05	2.09	2.36		B0E0194	27-May-20	0.239 L	01-Jun-20 22:56	1
PFTeDA	376-06-7	ND	0.786	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 22:56	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	106	70 - 130			B0E0194	27-May-20	0.239 L	01-Jun-20 22:56	1	
13C2-PFDA	SURR	97.7	70 - 130			B0E0194	27-May-20	0.239 L	01-Jun-20 22:56	1	
d5-EtFOSAA	SURR	85.0	70 - 130			B0E0194	27-May-20	0.239 L	01-Jun-20 22:56	1	
13C3-HFPO-DA	SURR	108	70 - 130			B0E0194	27-May-20	0.239 L	01-Jun-20 22:56	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 7/1/20

Sample ID: WI-AF-1FB68-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	200115-14	Column:	BEH C18
Project:	9000NVT3	Date Collected:	19-May-20 14:10	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.754	1.51	2.01		B0E0194	27-May-20	0.249 L	01-Jun-20 23:29	1
PFHxA	307-24-4	ND	0.754	1.51	2.01		B0E0194	27-May-20	0.249 L	01-Jun-20 23:29	1
HFPO-DA	13252-13-6	ND	1.01	2.01	2.26		B0E0194	27-May-20	0.249 L	01-Jun-20 23:29	1
PFHpA	375-85-9	ND	0.754	1.51	2.01		B0E0194	27-May-20	0.249 L	01-Jun-20 23:29	1
ADONA	919005-14-4	ND	0.754	1.51	2.01		B0E0194	27-May-20	0.249 L	01-Jun-20 23:29	1
PFHxS	355-46-4	ND	0.754	1.51	2.01		B0E0194	27-May-20	0.249 L	01-Jun-20 23:29	1
PFOA	335-67-1	ND	0.754	1.51	2.01		B0E0194	27-May-20	0.249 L	01-Jun-20 23:29	1
PFNA	375-95-1	ND	0.754	1.51	2.01		B0E0194	27-May-20	0.249 L	01-Jun-20 23:29	1
PFOS	1763-23-1	ND	0.754	1.51	2.01		B0E0194	27-May-20	0.249 L	01-Jun-20 23:29	1
9CI-PF3ONS	756426-58-1	ND	0.754	1.51	2.01		B0E0194	27-May-20	0.249 L	01-Jun-20 23:29	1
PFDA	335-76-2	ND	0.754	1.51	2.01		B0E0194	27-May-20	0.249 L	01-Jun-20 23:29	1
MeFOSAA	2355-31-9	ND	0.754	1.51	2.01		B0E0194	27-May-20	0.249 L	01-Jun-20 23:29	1
EtFOSAA	2991-50-6	ND	0.754	1.51	2.01		B0E0194	27-May-20	0.249 L	01-Jun-20 23:29	1
PFUnA	2058-94-8	ND	0.754	1.51	2.01		B0E0194	27-May-20	0.249 L	01-Jun-20 23:29	1
PFDoA	307-55-1	ND	0.754	1.51	2.01		B0E0194	27-May-20	0.249 L	01-Jun-20 23:29	1
PFTTrDA	72629-94-8	ND	0.754	1.51	2.01		B0E0194	27-May-20	0.249 L	01-Jun-20 23:29	1
11CI-PF3OUdS	763051-92-9	ND	1.01	2.01	2.26		B0E0194	27-May-20	0.249 L	01-Jun-20 23:29	1
PFTeDA	376-06-7	ND	0.754	1.51	2.01		B0E0194	27-May-20	0.249 L	01-Jun-20 23:29	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	105	70 - 130			B0E0194	27-May-20	0.249 L	01-Jun-20 23:29	1	
13C2-PFDA	SURR	95.8	70 - 130			B0E0194	27-May-20	0.249 L	01-Jun-20 23:29	1	
d5-EtFOSAA	SURR	91.1	70 - 130			B0E0194	27-May-20	0.249 L	01-Jun-20 23:29	1	
13C3-HFPO-DA	SURR	104	70 - 130			B0E0194	27-May-20	0.249 L	01-Jun-20 23:29	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw 7/1/20

Sample ID: WI-AF-1RW40-0520						EPA Method 537.1					
Client Data					Laboratory Data						
Name:	CH2M Hill		Matrix:	Drinking Water		Lab Sample:	2001115-15		Column:	BEH C18	
Project:	9000NVT3		Date Collected:	19-May-20 10:10		Date Received:	22-May-20 10:00				
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	2.92	0.785	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 23:40	1
PFHxA	307-24-4	2.10	0.785	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 23:40	1
HFPO-DA	13252-13-6	ND	1.05	2.09	2.36		B0E0194	27-May-20	0.239 L	01-Jun-20 23:40	1
PFHpA	375-85-9	1.13	0.785	1.57	2.09	J	B0E0194	27-May-20	0.239 L	01-Jun-20 23:40	1
ADONA	919005-14-4	ND	0.785	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 23:40	1
PFHxS	355-46-4	7.13	0.785	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 23:40	1
PFOA	335-67-1	7.90	0.785	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 23:40	1
PFNA	375-95-1	ND	0.785	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 23:40	1
PFOS	1763-23-1	3.81	0.785	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 23:40	1
9CI-PF3ONS	756426-58-1	ND	0.785	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 23:40	1
PFDA	335-76-2	ND	0.785	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 23:40	1
MeFOSAA	2355-31-9	ND	0.785	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 23:40	1
EtFOSAA	2991-50-6	ND	0.785	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 23:40	1
PFUnA	2058-94-8	ND	0.785	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 23:40	1
PFDoA	307-55-1	ND	0.785	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 23:40	1
PFTTrDA	72629-94-8	ND	0.785	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 23:40	1
11CI-PF3OUdS	763051-92-9	ND	1.05	2.09	2.36		B0E0194	27-May-20	0.239 L	01-Jun-20 23:40	1
PFTeDA	376-06-7	ND	0.785	1.57	2.09		B0E0194	27-May-20	0.239 L	01-Jun-20 23:40	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	99.2	70 - 130			B0E0194	27-May-20	0.239 L	01-Jun-20 23:40	1	
13C2-PFDA	SURR	88.5	70 - 130			B0E0194	27-May-20	0.239 L	01-Jun-20 23:40	1	
d5-EtFOSAA	SURR	91.2	70 - 130			B0E0194	27-May-20	0.239 L	01-Jun-20 23:40	1	
13C3-HFPO-DA	SURR	99.8	70 - 130			B0E0194	27-May-20	0.239 L	01-Jun-20 23:40	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

rw 7/1/20

Sample ID: WI-AF-1FB40-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001115-16	Column:	BEH C18
Project:	9000NVT3	Date Collected:	19-May-20 10:10	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 23:51	1
PFHxA	307-24-4	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 23:51	1
HFPO-DA	13252-13-6	ND	1.02	2.03	2.29		B0E0194	27-May-20	0.246 L	01-Jun-20 23:51	1
PFHpA	375-85-9	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 23:51	1
ADONA	919005-14-4	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 23:51	1
PFHxS	355-46-4	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 23:51	1
PFOA	335-67-1	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 23:51	1
PFNA	375-95-1	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 23:51	1
PFOS	1763-23-1	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 23:51	1
9CI-PF3ONS	756426-58-1	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 23:51	1
PFDA	335-76-2	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 23:51	1
MeFOSAA	2355-31-9	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 23:51	1
EtFOSAA	2991-50-6	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 23:51	1
PFUnA	2058-94-8	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 23:51	1
PFDoA	307-55-1	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 23:51	1
PFTTrDA	72629-94-8	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 23:51	1
11CI-PF3OUdS	763051-92-9	ND	1.02	2.03	2.29		B0E0194	27-May-20	0.246 L	01-Jun-20 23:51	1
PFTeDA	376-06-7	ND	0.762	1.52	2.03		B0E0194	27-May-20	0.246 L	01-Jun-20 23:51	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	96.0	70 - 130		B0E0194	27-May-20	0.246 L	01-Jun-20 23:51	1
13C2-PFDA	SURR	94.1	70 - 130		B0E0194	27-May-20	0.246 L	01-Jun-20 23:51	1
d5-EtFOSAA	SURR	94.9	70 - 130		B0E0194	27-May-20	0.246 L	01-Jun-20 23:51	1
13C3-HFPO-DA	SURR	99.7	70 - 130		B0E0194	27-May-20	0.246 L	01-Jun-20 23:51	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/1/20

**DATA VALIDATION SUMMARY REPORT
NAS WHIDBEY ISLAND, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon
 SDG: 2001116
 Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
 Site: NAS Whidbey Island, Residential Wells, CTO-4041, Washington
 Date: July 1, 2020

PFAS			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-CV-2RW04-0520	2001116-01	Water
2	WI-CV-2FB04-0520	2001116-02	Water
3	WI-CV-1RW90-0520	2001116-03	Water
4	WI-CV-1RW90P-0520	2001116-04	Water
5	WI-CV-1FB90-0520	2001116-05	Water
6	WI-CV-1RW22-0520	2001116-06	Water
7	WI-CV-1FB22-0520	2001116-07	Water
8	WI-CV-3RW10-0520	2001116-08	Water
9	WI-CV-3FB10-0520	2001116-09	Water
10	WI-CV-1RW37-0520	2001116-10	Water
11	WI-CV-1FB37-0520	2001116-11	Water
12	WI-CV-2RW06-0520	2001116-12	Water
13	WI-CV-2FB06-0520	2001116-13	Water

A full data validation was performed on the analytical data for seven water samples and six aqueous field blank samples collected on May 18, 2020 by CH2M Hill at the NAS Whidbey Island site in Washington. The samples were analyzed under the EPA Method “Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)”.

Specific method references are as follows:

Analysis
PFAS

Method References
USEPA Method 537.1

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, DoD Final General Data Validation Guidelines, November 2019, and the USEPA Data Review and Validation Guidelines as follows:

- The USEPA “Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537,” November 2018;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 100% of the detected results in the samples.

Data Usability Assessment

There were no serious deficiencies of data.

The data are acceptable for the intended purposes. There were no qualifications.

Perfluorinated Alkyl Substances (PFAS)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC sample results are summarized in the table below.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WI-CV-2FB04-0520	None - ND	-	-	-
WI-CV-1FB90-0520	None - ND	-	-	-
WI-CV-1FB22-0520	None - ND	-	-	-
WI-CV-3FB10-0520	None - ND	-	-	-
WI-CV-1FB37-0520	None - ND	-	-	-
WI-CV-2FB06-0520	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- MS/MSD samples were not analyzed.

Laboratory Control Samples (LCS)

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- All criteria were met.

Field Duplicate Sample Precision

- Field duplicate results are summarized below. The precision was acceptable.

Compound	WI-CV-1RW90-0520 ng/L	WI-CV-1RW90P-0520 ng/L	RPD	Qualifier
PFBS	45.7	42.4	7%	None
PFHxA	54.5	51.0	7%	
PFHpA	16.5	15.6	6%	
PFHxS	213	205	4%	
PFOA	173	164	5%	
PFOS	10.5	10.2	3%	

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed: Nancy Weaver
Nancy Weaver
Senior Chemist

Dated: 7/6/20

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

Sample ID: WI-CV-2RW04-0520						EPA Method 537.1					
Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	2001116-01	Column:	BEH C18			
Project:	9000NVT3	Date Collected:	18-May-20 15:10		Date Received:	22-May-20 10:00					
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	12.8	0.754	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 14:38	1
PFHxA	307-24-4	1.16	0.754	1.51	2.01	J	B0E0200	26-May-20	0.249 L	28-May-20 14:38	1
HFPO-DA	13252-13-6	ND	1.01	2.01	2.26		B0E0200	26-May-20	0.249 L	28-May-20 14:38	1
PFHpA	375-85-9	ND	0.754	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 14:38	1
ADONA	919005-14-4	ND	0.754	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 14:38	1
PFHxS	355-46-4	16.3	0.754	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 14:38	1
PFOA	335-67-1	3.99	0.754	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 14:38	1
PFNA	375-95-1	ND	0.754	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 14:38	1
PFOS	1763-23-1	13.2	0.754	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 14:38	1
9CI-PF3ONS	756426-58-1	ND	0.754	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 14:38	1
PFDA	335-76-2	ND	0.754	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 14:38	1
MeFOSAA	2355-31-9	ND	0.754	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 14:38	1
EtFOSAA	2991-50-6	ND	0.754	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 14:38	1
PFUnA	2058-94-8	ND	0.754	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 14:38	1
PFDoA	307-55-1	ND	0.754	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 14:38	1
PFTrDA	72629-94-8	ND	0.754	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 14:38	1
11CI-PF3OUdS	763051-92-9	ND	1.01	2.01	2.26		B0E0200	26-May-20	0.249 L	28-May-20 14:38	1
PFTeDA	376-06-7	ND	0.754	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 14:38	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	104	70 - 130			B0E0200	26-May-20	0.249 L	28-May-20 14:38	1	
13C2-PFDA	SURR	90.9	70 - 130			B0E0200	26-May-20	0.249 L	28-May-20 14:38	1	
d5-EtFOSAA	SURR	101	70 - 130			B0E0200	26-May-20	0.249 L	28-May-20 14:38	1	
13C3-HFPO-DA	SURR	94.5	70 - 130			B0E0200	26-May-20	0.249 L	28-May-20 14:38	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 7/1/20

Sample ID: WI-CV-2FB04-0520						EPA Method 537.1					
Client Data				Laboratory Data							
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001116-02	Column:	BEH C18				
Project:	9000NVT3	Date Collected:	18-May-20 15:10	Date Received:	22-May-20 10:00						
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.730	1.46	1.95		B0E0200	26-May-20	0.257 L	27-May-20 18:57	1
PFHxA	307-24-4	ND	0.730	1.46	1.95		B0E0200	26-May-20	0.257 L	27-May-20 18:57	1
HFPO-DA	13252-13-6	ND	0.973	1.95	2.19		B0E0200	26-May-20	0.257 L	27-May-20 18:57	1
PFHpA	375-85-9	ND	0.730	1.46	1.95		B0E0200	26-May-20	0.257 L	27-May-20 18:57	1
ADONA	919005-14-4	ND	0.730	1.46	1.95		B0E0200	26-May-20	0.257 L	27-May-20 18:57	1
PFHxS	355-46-4	ND	0.730	1.46	1.95		B0E0200	26-May-20	0.257 L	27-May-20 18:57	1
PFOA	335-67-1	ND	0.730	1.46	1.95		B0E0200	26-May-20	0.257 L	27-May-20 18:57	1
PFNA	375-95-1	ND	0.730	1.46	1.95		B0E0200	26-May-20	0.257 L	27-May-20 18:57	1
PFOS	1763-23-1	ND	0.730	1.46	1.95		B0E0200	26-May-20	0.257 L	27-May-20 18:57	1
9CI-PF3ONS	756426-58-1	ND	0.730	1.46	1.95		B0E0200	26-May-20	0.257 L	27-May-20 18:57	1
PFDA	335-76-2	ND	0.730	1.46	1.95		B0E0200	26-May-20	0.257 L	27-May-20 18:57	1
MeFOSAA	2355-31-9	ND	0.730	1.46	1.95		B0E0200	26-May-20	0.257 L	27-May-20 18:57	1
EtFOSAA	2991-50-6	ND	0.730	1.46	1.95		B0E0200	26-May-20	0.257 L	27-May-20 18:57	1
PFUnA	2058-94-8	ND	0.730	1.46	1.95		B0E0200	26-May-20	0.257 L	27-May-20 18:57	1
PFDoA	307-55-1	ND	0.730	1.46	1.95		B0E0200	26-May-20	0.257 L	27-May-20 18:57	1
PFTTrDA	72629-94-8	ND	0.730	1.46	1.95		B0E0200	26-May-20	0.257 L	27-May-20 18:57	1
11CI-PF3OUdS	763051-92-9	ND	0.973	1.95	2.19		B0E0200	26-May-20	0.257 L	27-May-20 18:57	1
PFTeDA	376-06-7	ND	0.730	1.46	1.95		B0E0200	26-May-20	0.257 L	27-May-20 18:57	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	103	70 - 130			B0E0200	26-May-20	0.257 L	27-May-20 18:57	1	
13C2-PFDA	SURR	94.4	70 - 130			B0E0200	26-May-20	0.257 L	27-May-20 18:57	1	
d5-EtFOSAA	SURR	94.1	70 - 130			B0E0200	26-May-20	0.257 L	27-May-20 18:57	1	
13C3-HFPO-DA	SURR	101	70 - 130			B0E0200	26-May-20	0.257 L	27-May-20 18:57	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 7/1/20

Sample ID: WI-CV-1RW90-0520						EPA Method 537.1					
Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	2001116-03	Column:	BEH C18			
Project:	9000NVT3	Date Collected:	18-May-20 14:15		Date Received:	22-May-20 10:00					
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	45.7	0.748	1.49	1.99		B0E0200	26-May-20	0.251 L	28-May-20 14:50	1
PFHxA	307-24-4	54.5	0.748	1.49	1.99		B0E0200	26-May-20	0.251 L	28-May-20 14:50	1
HFPO-DA	13252-13-6	ND	0.997	1.99	2.24		B0E0200	26-May-20	0.251 L	28-May-20 14:50	1
PFHpA	375-85-9	16.5	0.748	1.49	1.99		B0E0200	26-May-20	0.251 L	28-May-20 14:50	1
ADONA	919005-14-4	ND	0.748	1.49	1.99		B0E0200	26-May-20	0.251 L	28-May-20 14:50	1
PFHxS	355-46-4	213	0.748	1.49	1.99		B0E0200	26-May-20	0.251 L	28-May-20 14:50	1
PFOA	335-67-1	173	0.748	1.49	1.99		B0E0200	26-May-20	0.251 L	28-May-20 14:50	1
PFNA	375-95-1	ND	0.748	1.49	1.99		B0E0200	26-May-20	0.251 L	28-May-20 14:50	1
PFOS	1763-23-1	10.5	0.748	1.49	1.99		B0E0200	26-May-20	0.251 L	28-May-20 14:50	1
9CI-PF3ONS	756426-58-1	ND	0.748	1.49	1.99		B0E0200	26-May-20	0.251 L	28-May-20 14:50	1
PFDA	335-76-2	ND	0.748	1.49	1.99		B0E0200	26-May-20	0.251 L	28-May-20 14:50	1
MeFOSAA	2355-31-9	ND	0.748	1.49	1.99		B0E0200	26-May-20	0.251 L	28-May-20 14:50	1
EtFOSAA	2991-50-6	ND	0.748	1.49	1.99		B0E0200	26-May-20	0.251 L	28-May-20 14:50	1
PFUnA	2058-94-8	ND	0.748	1.49	1.99		B0E0200	26-May-20	0.251 L	28-May-20 14:50	1
PFDoA	307-55-1	ND	0.748	1.49	1.99		B0E0200	26-May-20	0.251 L	28-May-20 14:50	1
PFTTrDA	72629-94-8	ND	0.748	1.49	1.99		B0E0200	26-May-20	0.251 L	28-May-20 14:50	1
11CI-PF3OUdS	763051-92-9	ND	0.997	1.99	2.24		B0E0200	26-May-20	0.251 L	28-May-20 14:50	1
PFTeDA	376-06-7	ND	0.748	1.49	1.99		B0E0200	26-May-20	0.251 L	28-May-20 14:50	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	104	70 - 130			B0E0200	26-May-20	0.251 L	28-May-20 14:50	1	
13C2-PFDA	SURR	84.8	70 - 130			B0E0200	26-May-20	0.251 L	28-May-20 14:50	1	
d5-EtFOSAA	SURR	93.4	70 - 130			B0E0200	26-May-20	0.251 L	28-May-20 14:50	1	
13C3-HFPO-DA	SURR	92.1	70 - 130			B0E0200	26-May-20	0.251 L	28-May-20 14:50	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 7/1/20

Sample ID: WI-CV-1RW90P-0520						EPA Method 537.1					
Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	2001116-04	Column:	BEH C18			
Project:	9000NVT3	Date Collected:	18-May-20 14:20		Date Received:	22-May-20 10:00					
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	42.4	0.753	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 15:01	1
PFHxA	307-24-4	51.0	0.753	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 15:01	1
HFPO-DA	13252-13-6	ND	1.00	2.01	2.26		B0E0200	26-May-20	0.249 L	28-May-20 15:01	1
PFHpA	375-85-9	15.6	0.753	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 15:01	1
ADONA	919005-14-4	ND	0.753	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 15:01	1
PFHxS	355-46-4	205	0.753	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 15:01	1
PFOA	335-67-1	164	0.753	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 15:01	1
PFNA	375-95-1	ND	0.753	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 15:01	1
PFOS	1763-23-1	10.2	0.753	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 15:01	1
9CI-PF3ONS	756426-58-1	ND	0.753	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 15:01	1
PFDA	335-76-2	ND	0.753	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 15:01	1
MeFOSAA	2355-31-9	ND	0.753	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 15:01	1
EtFOSAA	2991-50-6	ND	0.753	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 15:01	1
PFUnA	2058-94-8	ND	0.753	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 15:01	1
PFDoA	307-55-1	ND	0.753	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 15:01	1
PFTrDA	72629-94-8	ND	0.753	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 15:01	1
11CI-PF3OUdS	763051-92-9	ND	1.00	2.01	2.26		B0E0200	26-May-20	0.249 L	28-May-20 15:01	1
PFTeDA	376-06-7	ND	0.753	1.51	2.01		B0E0200	26-May-20	0.249 L	28-May-20 15:01	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	99.7	70 - 130			B0E0200	26-May-20	0.249 L	28-May-20 15:01	1	
13C2-PFDA	SURR	85.0	70 - 130			B0E0200	26-May-20	0.249 L	28-May-20 15:01	1	
d5-EtFOSAA	SURR	92.5	70 - 130			B0E0200	26-May-20	0.249 L	28-May-20 15:01	1	
13C3-HFPO-DA	SURR	88.7	70 - 130			B0E0200	26-May-20	0.249 L	28-May-20 15:01	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

New 7/1/20

Sample ID: WI-CV-1FB90-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001116-05	Column:	BEH C18
Project:	9000NVT3	Date Collected:	18-May-20 14:15	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.744	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 19:30	1
PFHxA	307-24-4	ND	0.744	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 19:30	1
HFPO-DA	13252-13-6	ND	0.993	1.98	2.23		B0E0200	26-May-20	0.252 L	27-May-20 19:30	1
PFHpA	375-85-9	ND	0.744	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 19:30	1
ADONA	919005-14-4	ND	0.744	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 19:30	1
PFHxS	355-46-4	ND	0.744	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 19:30	1
PFOA	335-67-1	ND	0.744	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 19:30	1
PFNA	375-95-1	ND	0.744	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 19:30	1
PFOS	1763-23-1	ND	0.744	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 19:30	1
9CI-PF3ONS	756426-58-1	ND	0.744	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 19:30	1
PFDA	335-76-2	ND	0.744	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 19:30	1
MeFOSAA	2355-31-9	ND	0.744	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 19:30	1
EtFOSAA	2991-50-6	ND	0.744	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 19:30	1
PFUnA	2058-94-8	ND	0.744	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 19:30	1
PFDoA	307-55-1	ND	0.744	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 19:30	1
PFTTrDA	72629-94-8	ND	0.744	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 19:30	1
11CI-PF3OUdS	763051-92-9	ND	0.993	1.98	2.23		B0E0200	26-May-20	0.252 L	27-May-20 19:30	1
PFTeDA	376-06-7	ND	0.744	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 19:30	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	97.2	70 - 130		B0E0200	26-May-20	0.252 L	27-May-20 19:30	1
13C2-PFDA	SURR	86.0	70 - 130		B0E0200	26-May-20	0.252 L	27-May-20 19:30	1
d5-EtFOSAA	SURR	85.5	70 - 130		B0E0200	26-May-20	0.252 L	27-May-20 19:30	1
13C3-HFPO-DA	SURR	94.8	70 - 130		B0E0200	26-May-20	0.252 L	27-May-20 19:30	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/1/20

Sample ID: WI-CV-1RW22-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001116-06	Column:	BEH C18
Project:	9000NVT3	Date Collected:	18-May-20 16:10	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.748	1.49	2.00		B0E0200	26-May-20	0.251 L	27-May-20 19:41	1
PFHxA	307-24-4	ND	0.748	1.49	2.00		B0E0200	26-May-20	0.251 L	27-May-20 19:41	1
HFPO-DA	13252-13-6	ND	0.998	1.99	2.25		B0E0200	26-May-20	0.251 L	27-May-20 19:41	1
PFHpA	375-85-9	ND	0.748	1.49	2.00		B0E0200	26-May-20	0.251 L	27-May-20 19:41	1
ADONA	919005-14-4	ND	0.748	1.49	2.00		B0E0200	26-May-20	0.251 L	27-May-20 19:41	1
PFHxS	355-46-4	ND	0.748	1.49	2.00		B0E0200	26-May-20	0.251 L	27-May-20 19:41	1
PFOA	335-67-1	ND	0.748	1.49	2.00		B0E0200	26-May-20	0.251 L	27-May-20 19:41	1
PFNA	375-95-1	ND	0.748	1.49	2.00		B0E0200	26-May-20	0.251 L	27-May-20 19:41	1
PFOS	1763-23-1	ND	0.748	1.49	2.00		B0E0200	26-May-20	0.251 L	27-May-20 19:41	1
9CI-PF3ONS	756426-58-1	ND	0.748	1.49	2.00		B0E0200	26-May-20	0.251 L	27-May-20 19:41	1
PFDA	335-76-2	ND	0.748	1.49	2.00		B0E0200	26-May-20	0.251 L	27-May-20 19:41	1
MeFOSAA	2355-31-9	ND	0.748	1.49	2.00		B0E0200	26-May-20	0.251 L	27-May-20 19:41	1
EtFOSAA	2991-50-6	ND	0.748	1.49	2.00		B0E0200	26-May-20	0.251 L	27-May-20 19:41	1
PFUnA	2058-94-8	ND	0.748	1.49	2.00		B0E0200	26-May-20	0.251 L	27-May-20 19:41	1
PFDoA	307-55-1	ND	0.748	1.49	2.00		B0E0200	26-May-20	0.251 L	27-May-20 19:41	1
PFTTrDA	72629-94-8	ND	0.748	1.49	2.00		B0E0200	26-May-20	0.251 L	27-May-20 19:41	1
11CI-PF3OUdS	763051-92-9	ND	0.998	1.99	2.25		B0E0200	26-May-20	0.251 L	27-May-20 19:41	1
PFTeDA	376-06-7	ND	0.748	1.49	2.00		B0E0200	26-May-20	0.251 L	27-May-20 19:41	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.0	70 - 130		B0E0200	26-May-20	0.251 L	27-May-20 19:41	1
13C2-PFDA	SURR	85.3	70 - 130		B0E0200	26-May-20	0.251 L	27-May-20 19:41	1
d5-EtFOSAA	SURR	84.9	70 - 130		B0E0200	26-May-20	0.251 L	27-May-20 19:41	1
13C3-HFPO-DA	SURR	95.8	70 - 130		B0E0200	26-May-20	0.251 L	27-May-20 19:41	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/1/20

Sample ID: WI-CV-1FB22-0520 **EPA Method 537.1**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001116-07	Column:	BEH C18
Project:	9000NVT3	Date Collected:	18-May-20 16:10	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.749	1.50	2.00		B0E0200	26-May-20	0.250 L	27-May-20 19:52	1
PFHxA	307-24-4	ND	0.749	1.50	2.00		B0E0200	26-May-20	0.250 L	27-May-20 19:52	1
HFPO-DA	13252-13-6	ND	0.999	2.00	2.25		B0E0200	26-May-20	0.250 L	27-May-20 19:52	1
PFHpA	375-85-9	ND	0.749	1.50	2.00		B0E0200	26-May-20	0.250 L	27-May-20 19:52	1
ADONA	919005-14-4	ND	0.749	1.50	2.00		B0E0200	26-May-20	0.250 L	27-May-20 19:52	1
PFHxS	355-46-4	ND	0.749	1.50	2.00		B0E0200	26-May-20	0.250 L	27-May-20 19:52	1
PFOA	335-67-1	ND	0.749	1.50	2.00		B0E0200	26-May-20	0.250 L	27-May-20 19:52	1
PFNA	375-95-1	ND	0.749	1.50	2.00		B0E0200	26-May-20	0.250 L	27-May-20 19:52	1
PFOS	1763-23-1	ND	0.749	1.50	2.00		B0E0200	26-May-20	0.250 L	27-May-20 19:52	1
9CI-PF3ONS	756426-58-1	ND	0.749	1.50	2.00		B0E0200	26-May-20	0.250 L	27-May-20 19:52	1
PFDA	335-76-2	ND	0.749	1.50	2.00		B0E0200	26-May-20	0.250 L	27-May-20 19:52	1
MeFOSAA	2355-31-9	ND	0.749	1.50	2.00		B0E0200	26-May-20	0.250 L	27-May-20 19:52	1
EtFOSAA	2991-50-6	ND	0.749	1.50	2.00		B0E0200	26-May-20	0.250 L	27-May-20 19:52	1
PFUnA	2058-94-8	ND	0.749	1.50	2.00		B0E0200	26-May-20	0.250 L	27-May-20 19:52	1
PFDaA	307-55-1	ND	0.749	1.50	2.00		B0E0200	26-May-20	0.250 L	27-May-20 19:52	1
PFTrDA	72629-94-8	ND	0.749	1.50	2.00		B0E0200	26-May-20	0.250 L	27-May-20 19:52	1
11CI-PF3OUdS	763051-92-9	ND	0.999	2.00	2.25		B0E0200	26-May-20	0.250 L	27-May-20 19:52	1
PFTeDA	376-06-7	ND	0.749	1.50	2.00		B0E0200	26-May-20	0.250 L	27-May-20 19:52	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	97.9	70 - 130			B0E0200	26-May-20	0.250 L	27-May-20 19:52	1	
13C2-PFDA	SURR	85.0	70 - 130			B0E0200	26-May-20	0.250 L	27-May-20 19:52	1	
d5-EtFOSAA	SURR	74.4	70 - 130			B0E0200	26-May-20	0.250 L	27-May-20 19:52	1	
13C3-HFPO-DA	SURR	94.6	70 - 130			B0E0200	26-May-20	0.250 L	27-May-20 19:52	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 7/1/20

Sample ID: WI-CV-3RW10-0520						EPA Method 537.1					
Client Data				Laboratory Data							
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001116-08	Column:	BEH C18				
Project:	9000NVT3	Date Collected:	18-May-20 10:05	Date Received:	22-May-20 10:00						
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	203	0.732	1.46	1.95		B0E0200	26-May-20	0.256 L	28-May-20 15:12	1
PFHxA	307-24-4	210	0.732	1.46	1.95		B0E0200	26-May-20	0.256 L	28-May-20 15:12	1
HFPO-DA	13252-13-6	ND	0.976	1.95	2.20		B0E0200	26-May-20	0.256 L	28-May-20 15:12	1
PFHpA	375-85-9	17.7	0.732	1.46	1.95		B0E0200	26-May-20	0.256 L	28-May-20 15:12	1
ADONA	919005-14-4	ND	0.732	1.46	1.95		B0E0200	26-May-20	0.256 L	28-May-20 15:12	1
PFHxS	355-46-4	87.1	0.732	1.46	1.95		B0E0200	26-May-20	0.256 L	28-May-20 15:12	1
PFOA	335-67-1	95.7	0.732	1.46	1.95		B0E0200	26-May-20	0.256 L	28-May-20 15:12	1
PFNA	375-95-1	ND	0.732	1.46	1.95		B0E0200	26-May-20	0.256 L	28-May-20 15:12	1
PFOS	1763-23-1	2.15	0.732	1.46	1.95		B0E0200	26-May-20	0.256 L	28-May-20 15:12	1
9CI-PF3ONS	756426-58-1	ND	0.732	1.46	1.95		B0E0200	26-May-20	0.256 L	28-May-20 15:12	1
PFDA	335-76-2	ND	0.732	1.46	1.95		B0E0200	26-May-20	0.256 L	28-May-20 15:12	1
MeFOSAA	2355-31-9	ND	0.732	1.46	1.95		B0E0200	26-May-20	0.256 L	28-May-20 15:12	1
EtFOSAA	2991-50-6	ND	0.732	1.46	1.95		B0E0200	26-May-20	0.256 L	28-May-20 15:12	1
PFUnA	2058-94-8	ND	0.732	1.46	1.95		B0E0200	26-May-20	0.256 L	28-May-20 15:12	1
PFDoA	307-55-1	ND	0.732	1.46	1.95		B0E0200	26-May-20	0.256 L	28-May-20 15:12	1
PFTrDA	72629-94-8	ND	0.732	1.46	1.95		B0E0200	26-May-20	0.256 L	28-May-20 15:12	1
11CI-PF3OUdS	763051-92-9	ND	0.976	1.95	2.20		B0E0200	26-May-20	0.256 L	28-May-20 15:12	1
PFTeDA	376-06-7	ND	0.732	1.46	1.95		B0E0200	26-May-20	0.256 L	28-May-20 15:12	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	98.4	70 - 130			B0E0200	26-May-20	0.256 L	28-May-20 15:12	1	
13C2-PFDA	SURR	84.9	70 - 130			B0E0200	26-May-20	0.256 L	28-May-20 15:12	1	
d5-EtFOSAA	SURR	96.4	70 - 130			B0E0200	26-May-20	0.256 L	28-May-20 15:12	1	
13C3-HFPO-DA	SURR	88.8	70 - 130			B0E0200	26-May-20	0.256 L	28-May-20 15:12	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL:

LOQ - Limit of quantitation

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

Mw 7/1/20

Sample ID: WI-CV-3FB10-0520						EPA Method 537.1					
Client Data				Laboratory Data							
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001116-09	Column:	BEH C18				
Project:	9000NVT3	Date Collected:	18-May-20 10:05	Date Received:	22-May-20 10:00						
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.745	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 20:14	1
PFHxA	307-24-4	ND	0.745	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 20:14	1
HFPO-DA	13252-13-6	ND	0.993	1.98	2.23		B0E0200	26-May-20	0.252 L	27-May-20 20:14	1
PFHpA	375-85-9	ND	0.745	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 20:14	1
ADONA	919005-14-4	ND	0.745	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 20:14	1
PFHxS	355-46-4	ND	0.745	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 20:14	1
PFOA	335-67-1	ND	0.745	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 20:14	1
PFNA	375-95-1	ND	0.745	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 20:14	1
PFOS	1763-23-1	ND	0.745	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 20:14	1
9CI-PF3ONS	756426-58-1	ND	0.745	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 20:14	1
PFDA	335-76-2	ND	0.745	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 20:14	1
MeFOSAA	2355-31-9	ND	0.745	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 20:14	1
EtFOSAA	2991-50-6	ND	0.745	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 20:14	1
PFUnA	2058-94-8	ND	0.745	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 20:14	1
PFDoA	307-55-1	ND	0.745	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 20:14	1
PFTrDA	72629-94-8	ND	0.745	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 20:14	1
11CI-PF3OUdS	763051-92-9	ND	0.993	1.98	2.23		B0E0200	26-May-20	0.252 L	27-May-20 20:14	1
PFTeDA	376-06-7	ND	0.745	1.49	1.99		B0E0200	26-May-20	0.252 L	27-May-20 20:14	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	96.0	70 - 130			B0E0200	26-May-20	0.252 L	27-May-20 20:14	1	
13C2-PFDA	SURR	84.0	70 - 130			B0E0200	26-May-20	0.252 L	27-May-20 20:14	1	
d5-EtFOSAA	SURR	83.0	70 - 130			B0E0200	26-May-20	0.252 L	27-May-20 20:14	1	
13C3-HFPO-DA	SURR	94.2	70 - 130			B0E0200	26-May-20	0.252 L	27-May-20 20:14	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

m 7/1/20

Sample ID: WI-CV-1RW37-0520						EPA Method 537.1					
Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	2001116-10	Column:	BEH C18			
Project:	9000NVT3	Date Collected:	18-May-20 17:20		Date Received:	22-May-20 10:00					
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.760	1.52	2.03		B0E0200	26-May-20	0.247 L	27-May-20 20:25	1
PFHxA	307-24-4	ND	0.760	1.52	2.03		B0E0200	26-May-20	0.247 L	27-May-20 20:25	1
HFPO-DA	13252-13-6	ND	1.01	2.02	2.28		B0E0200	26-May-20	0.247 L	27-May-20 20:25	1
PFHpA	375-85-9	ND	0.760	1.52	2.03		B0E0200	26-May-20	0.247 L	27-May-20 20:25	1
ADONA	919005-14-4	ND	0.760	1.52	2.03		B0E0200	26-May-20	0.247 L	27-May-20 20:25	1
PFHxS	355-46-4	ND	0.760	1.52	2.03		B0E0200	26-May-20	0.247 L	27-May-20 20:25	1
PFOA	335-67-1	ND	0.760	1.52	2.03		B0E0200	26-May-20	0.247 L	27-May-20 20:25	1
PFNA	375-95-1	ND	0.760	1.52	2.03		B0E0200	26-May-20	0.247 L	27-May-20 20:25	1
PFOS	1763-23-1	ND	0.760	1.52	2.03		B0E0200	26-May-20	0.247 L	27-May-20 20:25	1
9CI-PF3ONS	756426-58-1	ND	0.760	1.52	2.03		B0E0200	26-May-20	0.247 L	27-May-20 20:25	1
PFDA	335-76-2	ND	0.760	1.52	2.03		B0E0200	26-May-20	0.247 L	27-May-20 20:25	1
MeFOSAA	2355-31-9	ND	0.760	1.52	2.03		B0E0200	26-May-20	0.247 L	27-May-20 20:25	1
EtFOSAA	2991-50-6	ND	0.760	1.52	2.03		B0E0200	26-May-20	0.247 L	27-May-20 20:25	1
PFUnA	2058-94-8	ND	0.760	1.52	2.03		B0E0200	26-May-20	0.247 L	27-May-20 20:25	1
PFDoA	307-55-1	ND	0.760	1.52	2.03		B0E0200	26-May-20	0.247 L	27-May-20 20:25	1
PFTTrDA	72629-94-8	ND	0.760	1.52	2.03		B0E0200	26-May-20	0.247 L	27-May-20 20:25	1
11CI-PF3OUdS	763051-92-9	ND	1.01	2.02	2.28		B0E0200	26-May-20	0.247 L	27-May-20 20:25	1
PFTeDA	376-06-7	ND	0.760	1.52	2.03		B0E0200	26-May-20	0.247 L	27-May-20 20:25	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	102	70 - 130			B0E0200	26-May-20	0.247 L	27-May-20 20:25	1	
13C2-PFDA	SURR	87.4	70 - 130			B0E0200	26-May-20	0.247 L	27-May-20 20:25	1	
d5-EtFOSAA	SURR	104	70 - 130			B0E0200	26-May-20	0.247 L	27-May-20 20:25	1	
13C3-HFPO-DA	SURR	99.0	70 - 130			B0E0200	26-May-20	0.247 L	27-May-20 20:25	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/1/20

Sample ID: WI-CV-1FB37-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001116-11	Column:	BEH C18
Project:	9000NVT3	Date Collected:	18-May-20 17:20	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.740	1.48	1.97		B0E0200	26-May-20	0.254 L	27-May-20 20:36	1
PFHxA	307-24-4	ND	0.740	1.48	1.97		B0E0200	26-May-20	0.254 L	27-May-20 20:36	1
HFPO-DA	13252-13-6	ND	0.986	1.97	2.22		B0E0200	26-May-20	0.254 L	27-May-20 20:36	1
PFHpA	375-85-9	ND	0.740	1.48	1.97		B0E0200	26-May-20	0.254 L	27-May-20 20:36	1
ADONA	919005-14-4	ND	0.740	1.48	1.97		B0E0200	26-May-20	0.254 L	27-May-20 20:36	1
PFHxS	355-46-4	ND	0.740	1.48	1.97		B0E0200	26-May-20	0.254 L	27-May-20 20:36	1
PFOA	335-67-1	ND	0.740	1.48	1.97		B0E0200	26-May-20	0.254 L	27-May-20 20:36	1
PFNA	375-95-1	ND	0.740	1.48	1.97		B0E0200	26-May-20	0.254 L	27-May-20 20:36	1
PFOS	1763-23-1	ND	0.740	1.48	1.97		B0E0200	26-May-20	0.254 L	27-May-20 20:36	1
9CI-PF3ONS	756426-58-1	ND	0.740	1.48	1.97		B0E0200	26-May-20	0.254 L	27-May-20 20:36	1
PFDA	335-76-2	ND	0.740	1.48	1.97		B0E0200	26-May-20	0.254 L	27-May-20 20:36	1
MeFOSAA	2355-31-9	ND	0.740	1.48	1.97		B0E0200	26-May-20	0.254 L	27-May-20 20:36	1
EtFOSAA	2991-50-6	ND	0.740	1.48	1.97		B0E0200	26-May-20	0.254 L	27-May-20 20:36	1
PFUnA	2058-94-8	ND	0.740	1.48	1.97		B0E0200	26-May-20	0.254 L	27-May-20 20:36	1
PFDoA	307-55-1	ND	0.740	1.48	1.97		B0E0200	26-May-20	0.254 L	27-May-20 20:36	1
PFTTrDA	72629-94-8	ND	0.740	1.48	1.97		B0E0200	26-May-20	0.254 L	27-May-20 20:36	1
11CI-PF3OUdS	763051-92-9	ND	0.986	1.97	2.22		B0E0200	26-May-20	0.254 L	27-May-20 20:36	1
PFTeDA	376-06-7	ND	0.740	1.48	1.97		B0E0200	26-May-20	0.254 L	27-May-20 20:36	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	94.0	70 - 130			B0E0200	26-May-20	0.254 L	27-May-20 20:36	1	
13C2-PFDA	SURR	85.9	70 - 130			B0E0200	26-May-20	0.254 L	27-May-20 20:36	1	
d5-EtFOSAA	SURR	82.2	70 - 130			B0E0200	26-May-20	0.254 L	27-May-20 20:36	1	
13C3-HFPO-DA	SURR	90.5	70 - 130			B0E0200	26-May-20	0.254 L	27-May-20 20:36	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/1/20

Sample ID: WI-CV-2RW06-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001116-12	Column:	BEH C18
Project:	9000NVT3	Date Collected:	18-May-20 11:20	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	24.2	0.763	1.52	2.04		B0E0200	26-May-20	0.246 L	02-Jun-20 18:42	1
PFHxA	307-24-4	103	0.763	1.52	2.04		B0E0200	26-May-20	0.246 L	02-Jun-20 18:42	1
HFPO-DA	13252-13-6	ND	1.02	2.03	2.29		B0E0200	26-May-20	0.246 L	02-Jun-20 18:42	1
PFHpA	375-85-9	14.0	0.763	1.52	2.04		B0E0200	26-May-20	0.246 L	02-Jun-20 18:42	1
ADONA	919005-14-4	ND	0.763	1.52	2.04		B0E0200	26-May-20	0.246 L	02-Jun-20 18:42	1
PFHxS	355-46-4	26.8	0.763	1.52	2.04		B0E0200	26-May-20	0.246 L	02-Jun-20 18:42	1
PFOA	335-67-1	153	0.763	1.52	2.04		B0E0200	26-May-20	0.246 L	02-Jun-20 18:42	1
PFNA	375-95-1	ND	0.763	1.52	2.04		B0E0200	26-May-20	0.246 L	02-Jun-20 18:42	1
PFOS	1763-23-1	ND	0.763	1.52	2.04		B0E0200	26-May-20	0.246 L	02-Jun-20 18:42	1
9CI-PF3ONS	756426-58-1	ND	0.763	1.52	2.04		B0E0200	26-May-20	0.246 L	02-Jun-20 18:42	1
PFDA	335-76-2	ND	0.763	1.52	2.04		B0E0200	26-May-20	0.246 L	02-Jun-20 18:42	1
MeFOSAA	2355-31-9	ND	0.763	1.52	2.04		B0E0200	26-May-20	0.246 L	02-Jun-20 18:42	1
EtFOSAA	2991-50-6	ND	0.763	1.52	2.04		B0E0200	26-May-20	0.246 L	02-Jun-20 18:42	1
PFUnA	2058-94-8	ND	0.763	1.52	2.04		B0E0200	26-May-20	0.246 L	02-Jun-20 18:42	1
PFDoA	307-55-1	ND	0.763	1.52	2.04		B0E0200	26-May-20	0.246 L	02-Jun-20 18:42	1
PFTTrDA	72629-94-8	ND	0.763	1.52	2.04		B0E0200	26-May-20	0.246 L	02-Jun-20 18:42	1
11CI-PF3OUdS	763051-92-9	ND	1.02	2.03	2.29		B0E0200	26-May-20	0.246 L	02-Jun-20 18:42	1
PFTeDA	376-06-7	ND	0.763	1.52	2.04		B0E0200	26-May-20	0.246 L	02-Jun-20 18:42	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	122	70 - 130		B0E0200	26-May-20	0.246 L	02-Jun-20 18:42	1
13C2-PFDA	SURR	117	70 - 130		B0E0200	26-May-20	0.246 L	02-Jun-20 18:42	1
d5-EtFOSAA	SURR	102	70 - 130		B0E0200	26-May-20	0.246 L	02-Jun-20 18:42	1
13C3-HFPO-DA	SURR	111	70 - 130		B0E0200	26-May-20	0.246 L	02-Jun-20 18:42	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

2021/1/20

Sample ID: WI-CV-2FB06-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001116-13	Column:	BEH C18
Project:	9000NVT3	Date Collected:	18-May-20 11:20	Date Received:	22-May-20 10:00		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.741	1.48	1.98		B0E0200	26-May-20	0.253 L	27-May-20 20:58	1
PFHxA	307-24-4	ND	0.741	1.48	1.98		B0E0200	26-May-20	0.253 L	27-May-20 20:58	1
HFPO-DA	13252-13-6	ND	0.988	1.98	2.22		B0E0200	26-May-20	0.253 L	27-May-20 20:58	1
PFHpA	375-85-9	ND	0.741	1.48	1.98		B0E0200	26-May-20	0.253 L	27-May-20 20:58	1
ADONA	919005-14-4	ND	0.741	1.48	1.98		B0E0200	26-May-20	0.253 L	27-May-20 20:58	1
PFHxS	355-46-4	ND	0.741	1.48	1.98		B0E0200	26-May-20	0.253 L	27-May-20 20:58	1
PFOA	335-67-1	ND	0.741	1.48	1.98		B0E0200	26-May-20	0.253 L	27-May-20 20:58	1
PFNA	375-95-1	ND	0.741	1.48	1.98		B0E0200	26-May-20	0.253 L	27-May-20 20:58	1
PFOS	1763-23-1	ND	0.741	1.48	1.98		B0E0200	26-May-20	0.253 L	27-May-20 20:58	1
9CI-PF3ONS	756426-58-1	ND	0.741	1.48	1.98		B0E0200	26-May-20	0.253 L	27-May-20 20:58	1
PFDA	335-76-2	ND	0.741	1.48	1.98		B0E0200	26-May-20	0.253 L	27-May-20 20:58	1
MeFOSAA	2355-31-9	ND	0.741	1.48	1.98		B0E0200	26-May-20	0.253 L	27-May-20 20:58	1
EtFOSAA	2991-50-6	ND	0.741	1.48	1.98		B0E0200	26-May-20	0.253 L	27-May-20 20:58	1
PFUnA	2058-94-8	ND	0.741	1.48	1.98		B0E0200	26-May-20	0.253 L	27-May-20 20:58	1
PFDoA	307-55-1	ND	0.741	1.48	1.98		B0E0200	26-May-20	0.253 L	27-May-20 20:58	1
PFTrDA	72629-94-8	ND	0.741	1.48	1.98		B0E0200	26-May-20	0.253 L	27-May-20 20:58	1
11CI-PF3OUdS	763051-92-9	ND	0.988	1.98	2.22		B0E0200	26-May-20	0.253 L	27-May-20 20:58	1
PFTeDA	376-06-7	ND	0.741	1.48	1.98		B0E0200	26-May-20	0.253 L	27-May-20 20:58	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	102	70 - 130			B0E0200	26-May-20	0.253 L	27-May-20 20:58	1	
13C2-PFDA	SURR	91.5	70 - 130			B0E0200	26-May-20	0.253 L	27-May-20 20:58	1	
d5-EtFOSAA	SURR	98.6	70 - 130			B0E0200	26-May-20	0.253 L	27-May-20 20:58	1	
13C3-HFPO-DA	SURR	100	70 - 130			B0E0200	26-May-20	0.253 L	27-May-20 20:58	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

MW 7/1/20

**DATA VALIDATION SUMMARY REPORT
NAS WHIDBEY ISLAND, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon
 SDG: 2001159
 Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
 Site: NAS Whidbey Island, Residential Wells, CTO-4041, Washington
 Date: July 1, 2020

PFAS			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-CV-1RW14-0520	2001159-01	Water
2	WI-CV-1FB14-0520	2001159-02	Water
3	WI-A06-RW24-0520	2001159-03	Water
4	WI-A06-FB24-0520	2001159-04	Water
5	WI-A06-RW19-0520	2001159-05	Water
6	WI-A06-FB19-0520	2001159-06	Water
7	WI-CV-3RW07-0520	2001159-07	Water
8	WI-CV-3FB07-0520	2001159-08	Water
9	WI-CV-1RW09-0520	2001159-09	Water
10	WI-CV-1FB09-0520	2001159-10	Water
11	WI-CV-1RW72-0520	2001159-11	Water
12	WI-CV-1FB72-0520	2001159-12	Water

A full data validation was performed on the analytical data for six water samples and six aqueous field blank samples collected on May 22-27, 2020 by CH2M Hill at the NAS Whidbey Island site in Washington. The samples were analyzed under the EPA Method “Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)”.

Specific method references are as follows:

Analysis
PFAS

Method References
USEPA Method 537.1

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, DoD Final General Data Validation Guidelines, November 2019, and the USEPA Data Review and Validation Guidelines as follows:

- The USEPA “Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537,” November 2018;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 100% of the detected results in the samples.

Data Usability Assessment

There were no serious deficiencies of data.

The data are acceptable for the intended purposes. There were no qualifications.

Perfluorinated Alkyl Substances (PFAS)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC sample results are summarized in the table below.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WI-CV-1FB14-0520	None - ND	-	-	-
WI-A06-FB24-0520	None - ND	-	-	-
WI-A06-FB19-0520	None - ND	-	-	-
WI-CV-3FB07-0520	None - ND	-	-	-
WI-CV-1FB09-0520	None - ND	-	-	-
WI-CV-1FB72-0520	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- MS/MSD samples were not analyzed.

Laboratory Control Samples (LCS)

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- All criteria were met.

Field Duplicate Sample Precision

- Field duplicate samples were not collected.

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed: Nancy Weaver
Nancy Weaver
Senior Chemist

Dated: 7/6/20

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

Sample ID: WI-CV-1RW14-0520						EPA Method 537.1					
Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	2001159-01	Column:	BEH C18			
Project:	9000NVT3	Date Collected:	22-May-20 12:50		Date Received:	28-May-20 10:14					
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.757	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 06:30	1
PFHxA	307-24-4	ND	0.757	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 06:30	1
HFPO-DA	13252-13-6	ND	1.01	2.02	2.27		B0E0250	31-May-20	0.248 L	03-Jun-20 06:30	1
PFHpA	375-85-9	ND	0.757	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 06:30	1
ADONA	919005-14-4	ND	0.757	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 06:30	1
PFHxS	355-46-4	ND	0.757	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 06:30	1
PFOA	335-67-1	ND	0.757	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 06:30	1
PFNA	375-95-1	ND	0.757	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 06:30	1
PFOS	1763-23-1	ND	0.757	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 06:30	1
9CI-PF3ONS	756426-58-1	ND	0.757	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 06:30	1
PFDA	335-76-2	ND	0.757	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 06:30	1
MeFOSAA	2355-31-9	ND	0.757	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 06:30	1
EtFOSAA	2991-50-6	ND	0.757	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 06:30	1
PFUnA	2058-94-8	ND	0.757	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 06:30	1
PFDoA	307-55-1	ND	0.757	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 06:30	1
PFTTrDA	72629-94-8	ND	0.757	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 06:30	1
11CI-PF3OUdS	763051-92-9	ND	1.01	2.02	2.27		B0E0250	31-May-20	0.248 L	03-Jun-20 06:30	1
PFTeDA	376-06-7	ND	0.757	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 06:30	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	109	70 - 130			B0E0250	31-May-20	0.248 L	03-Jun-20 06:30	1	
13C2-PFDA	SURR	99.7	70 - 130			B0E0250	31-May-20	0.248 L	03-Jun-20 06:30	1	
d5-EtFOSAA	SURR	86.4	70 - 130			B0E0250	31-May-20	0.248 L	03-Jun-20 06:30	1	
13C3-HFPO-DA	SURR	116	70 - 130			B0E0250	31-May-20	0.248 L	03-Jun-20 06:30	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 7/1/20

Sample ID: WI-CV-1FB14-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001159-02	Column:	BEH C18
Project:	9000NVT3	Date Collected:	22-May-20 12:50	Date Received:	28-May-20 10:14		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 06:41	1
PFHxA	307-24-4	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 06:41	1
HFPO-DA	13252-13-6	ND	1.01	2.01	2.26		B0E0250	31-May-20	0.249 L	03-Jun-20 06:41	1
PFHpA	375-85-9	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 06:41	1
ADONA	919005-14-4	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 06:41	1
PFHxS	355-46-4	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 06:41	1
PFOA	335-67-1	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 06:41	1
PFNA	375-95-1	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 06:41	1
PFOS	1763-23-1	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 06:41	1
9CI-PF3ONS	756426-58-1	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 06:41	1
PFDA	335-76-2	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 06:41	1
MeFOSAA	2355-31-9	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 06:41	1
EtFOSAA	2991-50-6	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 06:41	1
PFUnA	2058-94-8	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 06:41	1
PFDoA	307-55-1	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 06:41	1
PFTTrDA	72629-94-8	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 06:41	1
11CI-PF3OUdS	763051-92-9	ND	1.01	2.01	2.26		B0E0250	31-May-20	0.249 L	03-Jun-20 06:41	1
PFTeDA	376-06-7	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 06:41	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	109	70 - 130		B0E0250	31-May-20	0.249 L	03-Jun-20 06:41	1
13C2-PFDA	SURR	107	70 - 130		B0E0250	31-May-20	0.249 L	03-Jun-20 06:41	1
d5-EtFOSAA	SURR	86.9	70 - 130		B0E0250	31-May-20	0.249 L	03-Jun-20 06:41	1
13C3-HFPO-DA	SURR	114	70 - 130		B0E0250	31-May-20	0.249 L	03-Jun-20 06:41	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/1/20

Sample ID: WI-A06-RW24-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001159-03	Column:	BEH C18
Project:	9000NVT3	Date Collected:	26-May-20 10:15	Date Received:	28-May-20 10:14		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	19.9	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 06:52	1
PFHxA	307-24-4	46.9	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 06:52	1
HFPO-DA	13252-13-6	ND	1.02	2.03	2.29		B0E0250	31-May-20	0.246 L	03-Jun-20 06:52	1
PFHpA	375-85-9	7.53	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 06:52	1
ADONA	919005-14-4	ND	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 06:52	1
PFHxS	355-46-4	365	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 06:52	1
PFOA	335-67-1	44.9	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 06:52	1
PFNA	375-95-1	ND	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 06:52	1
PFOS	1763-23-1	189	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 06:52	1
9CI-PF3ONS	756426-58-1	ND	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 06:52	1
PFDA	335-76-2	ND	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 06:52	1
MeFOSAA	2355-31-9	ND	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 06:52	1
EtFOSAA	2991-50-6	ND	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 06:52	1
PFUnA	2058-94-8	ND	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 06:52	1
PFDoA	307-55-1	ND	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 06:52	1
PFTrDA	72629-94-8	ND	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 06:52	1
11CI-PF3OUdS	763051-92-9	ND	1.02	2.03	2.29		B0E0250	31-May-20	0.246 L	03-Jun-20 06:52	1
PFTeDA	376-06-7	ND	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 06:52	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	97.5	70 - 130		B0E0250	31-May-20	0.246 L	03-Jun-20 06:52	1
13C2-PFDA	SURR	97.3	70 - 130		B0E0250	31-May-20	0.246 L	03-Jun-20 06:52	1
d5-EtFOSAA	SURR	82.8	70 - 130		B0E0250	31-May-20	0.246 L	03-Jun-20 06:52	1
13C3-HFPO-DA	SURR	107	70 - 130		B0E0250	31-May-20	0.246 L	03-Jun-20 06:52	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/1/20

Sample ID: WI-A06-FB24-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001159-04	Column:	BEH C18
Project:	9000NVT3	Date Collected:	26-May-20 10:15	Date Received:	28-May-20 10:14		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.747	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 07:04	1
PFHxA	307-24-4	ND	0.747	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 07:04	1
HFPO-DA	13252-13-6	ND	0.996	1.99	2.24		B0E0250	31-May-20	0.251 L	03-Jun-20 07:04	1
PFHpA	375-85-9	ND	0.747	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 07:04	1
ADONA	919005-14-4	ND	0.747	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 07:04	1
PFHxS	355-46-4	ND	0.747	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 07:04	1
PFOA	335-67-1	ND	0.747	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 07:04	1
PFNA	375-95-1	ND	0.747	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 07:04	1
PFOS	1763-23-1	ND	0.747	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 07:04	1
9CI-PF3ONS	756426-58-1	ND	0.747	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 07:04	1
PFDA	335-76-2	ND	0.747	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 07:04	1
MeFOSAA	2355-31-9	ND	0.747	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 07:04	1
EtFOSAA	2991-50-6	ND	0.747	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 07:04	1
PFUnA	2058-94-8	ND	0.747	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 07:04	1
PFDoA	307-55-1	ND	0.747	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 07:04	1
PFTTrDA	72629-94-8	ND	0.747	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 07:04	1
11CI-PF3OUdS	763051-92-9	ND	0.996	1.99	2.24		B0E0250	31-May-20	0.251 L	03-Jun-20 07:04	1
PFTeDA	376-06-7	ND	0.747	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 07:04	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130		B0E0250	31-May-20	0.251 L	03-Jun-20 07:04	1
13C2-PFDA	SURR	99.0	70 - 130		B0E0250	31-May-20	0.251 L	03-Jun-20 07:04	1
d5-EtFOSAA	SURR	79.2	70 - 130		B0E0250	31-May-20	0.251 L	03-Jun-20 07:04	1
13C3-HFPO-DA	SURR	112	70 - 130		B0E0250	31-May-20	0.251 L	03-Jun-20 07:04	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 7/1/20

Sample ID: WI-A06-RW19-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001159-05	Column:	BEH C18
Project:	9000NVT3	Date Collected:	26-May-20 12:05	Date Received:	28-May-20 10:14		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	50.4	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 07:15	1
PFHxA	307-24-4	68.1	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 07:15	1
HFPO-DA	13252-13-6	ND	1.02	2.03	2.29		B0E0250	31-May-20	0.246 L	03-Jun-20 07:15	1
PFHpA	375-85-9	35.8	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 07:15	1
ADONA	919005-14-4	ND	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 07:15	1
PFHxS	355-46-4	236	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 07:15	1
PFOA	335-67-1	46.4	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 07:15	1
PFNA	375-95-1	3.17	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 07:15	1
PFOS	1763-23-1	96.9	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 07:15	1
9CI-PF3ONS	756426-58-1	ND	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 07:15	1
PFDA	335-76-2	ND	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 07:15	1
MeFOSAA	2355-31-9	ND	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 07:15	1
EtFOSAA	2991-50-6	ND	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 07:15	1
PFUnA	2058-94-8	ND	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 07:15	1
PFDoA	307-55-1	ND	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 07:15	1
PFTrDA	72629-94-8	ND	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 07:15	1
11CI-PF3OUdS	763051-92-9	ND	1.02	2.03	2.29		B0E0250	31-May-20	0.246 L	03-Jun-20 07:15	1
PFTeDA	376-06-7	ND	0.762	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 07:15	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	110	70 - 130			B0E0250	31-May-20	0.246 L	03-Jun-20 07:15	1	
13C2-PFDA	SURR	106	70 - 130			B0E0250	31-May-20	0.246 L	03-Jun-20 07:15	1	
d5-EtFOSAA	SURR	85.4	70 - 130			B0E0250	31-May-20	0.246 L	03-Jun-20 07:15	1	
13C3-HFPO-DA	SURR	119	70 - 130			B0E0250	31-May-20	0.246 L	03-Jun-20 07:15	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/1/20

Sample ID: WI-A06-FB19-0520						EPA Method 537.1					
Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water			Lab Sample:	2001159-06	Column:	BEH C18		
Project:	9000NVT3	Date Collected:	26-May-20 12:05			Date Received:	28-May-20 10:14				
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 07:26	1
PFHxA	307-24-4	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 07:26	1
HFPO-DA	13252-13-6	ND	1.00	2.01	2.26		B0E0250	31-May-20	0.249 L	03-Jun-20 07:26	1
PFHpA	375-85-9	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 07:26	1
ADONA	919005-14-4	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 07:26	1
PFHxS	355-46-4	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 07:26	1
PFOA	335-67-1	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 07:26	1
PFNA	375-95-1	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 07:26	1
PFOS	1763-23-1	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 07:26	1
9CI-PF3ONS	756426-58-1	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 07:26	1
PFDA	335-76-2	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 07:26	1
MeFOSAA	2355-31-9	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 07:26	1
EtFOSAA	2991-50-6	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 07:26	1
PFUnA	2058-94-8	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 07:26	1
PFDoA	307-55-1	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 07:26	1
PFTTrDA	72629-94-8	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 07:26	1
11CI-PF3OUdS	763051-92-9	ND	1.00	2.01	2.26		B0E0250	31-May-20	0.249 L	03-Jun-20 07:26	1
PFTeDA	376-06-7	ND	0.754	1.51	2.01		B0E0250	31-May-20	0.249 L	03-Jun-20 07:26	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	106	70 - 130			B0E0250	31-May-20	0.249 L	03-Jun-20 07:26	1	
13C2-PFDA	SURR	99.7	70 - 130			B0E0250	31-May-20	0.249 L	03-Jun-20 07:26	1	
d5-EtFOSAA	SURR	86.3	70 - 130			B0E0250	31-May-20	0.249 L	03-Jun-20 07:26	1	
13C3-HFPO-DA	SURR	115	70 - 130			B0E0250	31-May-20	0.249 L	03-Jun-20 07:26	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 7/1/20

Sample ID: WI-CV-3RW07-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001159-07	Column:	BEH C18
Project:	9000NVT3	Date Collected:	26-May-20 13:00	Date Received:	28-May-20 10:14		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.771	1.54	2.06		B0E0250	31-May-20	0.243 L	03-Jun-20 07:37	1
PFHxA	307-24-4	ND	0.771	1.54	2.06		B0E0250	31-May-20	0.243 L	03-Jun-20 07:37	1
HFPO-DA	13252-13-6	ND	1.03	2.06	2.31		B0E0250	31-May-20	0.243 L	03-Jun-20 07:37	1
PFHpA	375-85-9	ND	0.771	1.54	2.06		B0E0250	31-May-20	0.243 L	03-Jun-20 07:37	1
ADONA	919005-14-4	ND	0.771	1.54	2.06		B0E0250	31-May-20	0.243 L	03-Jun-20 07:37	1
PFHxS	355-46-4	ND	0.771	1.54	2.06		B0E0250	31-May-20	0.243 L	03-Jun-20 07:37	1
PFOA	335-67-1	2.15	0.771	1.54	2.06		B0E0250	31-May-20	0.243 L	03-Jun-20 07:37	1
PFNA	375-95-1	ND	0.771	1.54	2.06		B0E0250	31-May-20	0.243 L	03-Jun-20 07:37	1
PFOS	1763-23-1	2.50	0.771	1.54	2.06		B0E0250	31-May-20	0.243 L	03-Jun-20 07:37	1
9CI-PF3ONS	756426-58-1	ND	0.771	1.54	2.06		B0E0250	31-May-20	0.243 L	03-Jun-20 07:37	1
PFDA	335-76-2	ND	0.771	1.54	2.06		B0E0250	31-May-20	0.243 L	03-Jun-20 07:37	1
MeFOSAA	2355-31-9	ND	0.771	1.54	2.06		B0E0250	31-May-20	0.243 L	03-Jun-20 07:37	1
EtFOSAA	2991-50-6	ND	0.771	1.54	2.06		B0E0250	31-May-20	0.243 L	03-Jun-20 07:37	1
PFUnA	2058-94-8	ND	0.771	1.54	2.06		B0E0250	31-May-20	0.243 L	03-Jun-20 07:37	1
PFDoA	307-55-1	ND	0.771	1.54	2.06		B0E0250	31-May-20	0.243 L	03-Jun-20 07:37	1
PFTTrDA	72629-94-8	ND	0.771	1.54	2.06		B0E0250	31-May-20	0.243 L	03-Jun-20 07:37	1
11CI-PF3OUdS	763051-92-9	ND	1.03	2.06	2.31		B0E0250	31-May-20	0.243 L	03-Jun-20 07:37	1
PFTeDA	376-06-7	ND	0.771	1.54	2.06		B0E0250	31-May-20	0.243 L	03-Jun-20 07:37	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130		B0E0250	31-May-20	0.243 L	03-Jun-20 07:37	1
13C2-PFDA	SURR	97.5	70 - 130		B0E0250	31-May-20	0.243 L	03-Jun-20 07:37	1
d5-EtFOSAA	SURR	83.5	70 - 130		B0E0250	31-May-20	0.243 L	03-Jun-20 07:37	1
13C3-HFPO-DA	SURR	109	70 - 130		B0E0250	31-May-20	0.243 L	03-Jun-20 07:37	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL

LOQ - Limit of quantitation

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

mw 7/1/20

Sample ID: WI-CV-3FB07-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001159-08	Column:	BEH C18
Project:	9000NVT3	Date Collected:	26-May-20 13:00	Date Received:	28-May-20 10:14		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.756	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 07:48	1
PFHxA	307-24-4	ND	0.756	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 07:48	1
HFPO-DA	13252-13-6	ND	1.01	2.02	2.27		B0E0250	31-May-20	0.248 L	03-Jun-20 07:48	1
PFHpA	375-85-9	ND	0.756	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 07:48	1
ADONA	919005-14-4	ND	0.756	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 07:48	1
PFHxS	355-46-4	ND	0.756	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 07:48	1
PFOA	335-67-1	ND	0.756	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 07:48	1
PFNA	375-95-1	ND	0.756	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 07:48	1
PFOS	1763-23-1	ND	0.756	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 07:48	1
9CI-PF3ONS	756426-58-1	ND	0.756	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 07:48	1
PFDA	335-76-2	ND	0.756	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 07:48	1
MeFOSAA	2355-31-9	ND	0.756	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 07:48	1
EtFOSAA	2991-50-6	ND	0.756	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 07:48	1
PFUnA	2058-94-8	ND	0.756	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 07:48	1
PFDoA	307-55-1	ND	0.756	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 07:48	1
PFTTrDA	72629-94-8	ND	0.756	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 07:48	1
11CI-PF3OUdS	763051-92-9	ND	1.01	2.02	2.27		B0E0250	31-May-20	0.248 L	03-Jun-20 07:48	1
PFTeDA	376-06-7	ND	0.756	1.51	2.02		B0E0250	31-May-20	0.248 L	03-Jun-20 07:48	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130		B0E0250	31-May-20	0.248 L	03-Jun-20 07:48	1
13C2-PFDA	SURR	102	70 - 130		B0E0250	31-May-20	0.248 L	03-Jun-20 07:48	1
d5-EtFOSAA	SURR	79.2	70 - 130		B0E0250	31-May-20	0.248 L	03-Jun-20 07:48	1
13C3-HFPO-DA	SURR	112	70 - 130		B0E0250	31-May-20	0.248 L	03-Jun-20 07:48	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

red 7/1/20

Sample ID: WI-CV-1RW09-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001159-09	Column:	BEH C18
Project:	9000NVT3	Date Collected:	26-May-20 14:50	Date Received:	28-May-20 10:14		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	3.89	0.749	1.50	2.00		B0E0250	31-May-20	0.250 L	03-Jun-20 07:59	1
PFHxA	307-24-4	2.80	0.749	1.50	2.00		B0E0250	31-May-20	0.250 L	03-Jun-20 07:59	1
HFPO-DA	13252-13-6	ND	0.999	2.00	2.25		B0E0250	31-May-20	0.250 L	03-Jun-20 07:59	1
PFHpA	375-85-9	ND	0.749	1.50	2.00		B0E0250	31-May-20	0.250 L	03-Jun-20 07:59	1
ADONA	919005-14-4	ND	0.749	1.50	2.00		B0E0250	31-May-20	0.250 L	03-Jun-20 07:59	1
PFHxS	355-46-4	ND	0.749	1.50	2.00		B0E0250	31-May-20	0.250 L	03-Jun-20 07:59	1
PFOA	335-67-1	ND	0.749	1.50	2.00		B0E0250	31-May-20	0.250 L	03-Jun-20 07:59	1
PFNA	375-95-1	ND	0.749	1.50	2.00		B0E0250	31-May-20	0.250 L	03-Jun-20 07:59	1
PFOS	1763-23-1	ND	0.749	1.50	2.00		B0E0250	31-May-20	0.250 L	03-Jun-20 07:59	1
9CI-PF3ONS	756426-58-1	ND	0.749	1.50	2.00		B0E0250	31-May-20	0.250 L	03-Jun-20 07:59	1
PFDA	335-76-2	ND	0.749	1.50	2.00		B0E0250	31-May-20	0.250 L	03-Jun-20 07:59	1
MeFOSAA	2355-31-9	ND	0.749	1.50	2.00		B0E0250	31-May-20	0.250 L	03-Jun-20 07:59	1
EtFOSAA	2991-50-6	ND	0.749	1.50	2.00		B0E0250	31-May-20	0.250 L	03-Jun-20 07:59	1
PFUnA	2058-94-8	ND	0.749	1.50	2.00		B0E0250	31-May-20	0.250 L	03-Jun-20 07:59	1
PFDoA	307-55-1	ND	0.749	1.50	2.00		B0E0250	31-May-20	0.250 L	03-Jun-20 07:59	1
PFTTrDA	72629-94-8	ND	0.749	1.50	2.00		B0E0250	31-May-20	0.250 L	03-Jun-20 07:59	1
11CI-PF3OUdS	763051-92-9	ND	0.999	2.00	2.25		B0E0250	31-May-20	0.250 L	03-Jun-20 07:59	1
PFTeDA	376-06-7	ND	0.749	1.50	2.00		B0E0250	31-May-20	0.250 L	03-Jun-20 07:59	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	109		70 - 130			B0E0250	31-May-20	0.250 L	03-Jun-20 07:59	1
13C2-PFDA	SURR	101		70 - 130			B0E0250	31-May-20	0.250 L	03-Jun-20 07:59	1
d5-EtFOSAA	SURR	76.5		70 - 130			B0E0250	31-May-20	0.250 L	03-Jun-20 07:59	1
13C3-HFPO-DA	SURR	116		70 - 130			B0E0250	31-May-20	0.250 L	03-Jun-20 07:59	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/1/20

Sample ID: WI-CV-1FB09-0520						EPA Method 537.1					
Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	2001159-10	Column:	BEH C18			
Project:	9000NVT3	Date Collected:	26-May-20 14:50		Date Received:	28-May-20 10:14					
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.761	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 08:10	1
PFHxA	307-24-4	ND	0.761	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 08:10	1
HFPO-DA	13252-13-6	ND	1.02	2.03	2.28		B0E0250	31-May-20	0.246 L	03-Jun-20 08:10	1
PFHpA	375-85-9	ND	0.761	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 08:10	1
ADONA	919005-14-4	ND	0.761	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 08:10	1
PFHxS	355-46-4	ND	0.761	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 08:10	1
PFOA	335-67-1	ND	0.761	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 08:10	1
PFNA	375-95-1	ND	0.761	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 08:10	1
PFOS	1763-23-1	ND	0.761	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 08:10	1
9CI-PF3ONS	756426-58-1	ND	0.761	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 08:10	1
PFDA	335-76-2	ND	0.761	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 08:10	1
MeFOSAA	2355-31-9	ND	0.761	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 08:10	1
EtFOSAA	2991-50-6	ND	0.761	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 08:10	1
PFUnA	2058-94-8	ND	0.761	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 08:10	1
PFDoA	307-55-1	ND	0.761	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 08:10	1
PFTTrDA	72629-94-8	ND	0.761	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 08:10	1
11CI-PF3OUdS	763051-92-9	ND	1.02	2.03	2.28		B0E0250	31-May-20	0.246 L	03-Jun-20 08:10	1
PFTeDA	376-06-7	ND	0.761	1.52	2.03		B0E0250	31-May-20	0.246 L	03-Jun-20 08:10	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	112	70 - 130			B0E0250	31-May-20	0.246 L	03-Jun-20 08:10	1	
13C2-PFDA	SURR	105	70 - 130			B0E0250	31-May-20	0.246 L	03-Jun-20 08:10	1	
d5-EtFOSAA	SURR	81.0	70 - 130			B0E0250	31-May-20	0.246 L	03-Jun-20 08:10	1	
13C3-HFPO-DA	SURR	118	70 - 130			B0E0250	31-May-20	0.246 L	03-Jun-20 08:10	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

m 7/1/20

Sample ID: WI-CV-1RW72-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001159-11	Column:	BEH C18
Project:	9000NVT3	Date Collected:	27-May-20 09:10	Date Received:	28-May-20 10:14		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	1.43	0.748	1.49	2.00	J	B0E0250	31-May-20	0.251 L	03-Jun-20 08:21	1
PFHxA	307-24-4	2.14	0.748	1.49	2.00		B0E0250	31-May-20	0.251 L	03-Jun-20 08:21	1
HFPO-DA	13252-13-6	ND	0.998	1.99	2.25		B0E0250	31-May-20	0.251 L	03-Jun-20 08:21	1
PFHpA	375-85-9	ND	0.748	1.49	2.00		B0E0250	31-May-20	0.251 L	03-Jun-20 08:21	1
ADONA	919005-14-4	ND	0.748	1.49	2.00		B0E0250	31-May-20	0.251 L	03-Jun-20 08:21	1
PFHxS	355-46-4	1.13	0.748	1.49	2.00	J	B0E0250	31-May-20	0.251 L	03-Jun-20 08:21	1
PFOA	335-67-1	1.26	0.748	1.49	2.00	J	B0E0250	31-May-20	0.251 L	03-Jun-20 08:21	1
PFNA	375-95-1	ND	0.748	1.49	2.00		B0E0250	31-May-20	0.251 L	03-Jun-20 08:21	1
PFOS	1763-23-1	ND	0.748	1.49	2.00		B0E0250	31-May-20	0.251 L	03-Jun-20 08:21	1
9CI-PF3ONS	756426-58-1	ND	0.748	1.49	2.00		B0E0250	31-May-20	0.251 L	03-Jun-20 08:21	1
PFDA	335-76-2	ND	0.748	1.49	2.00		B0E0250	31-May-20	0.251 L	03-Jun-20 08:21	1
MeFOSAA	2355-31-9	ND	0.748	1.49	2.00		B0E0250	31-May-20	0.251 L	03-Jun-20 08:21	1
EtFOSAA	2991-50-6	ND	0.748	1.49	2.00		B0E0250	31-May-20	0.251 L	03-Jun-20 08:21	1
PFUnA	2058-94-8	ND	0.748	1.49	2.00		B0E0250	31-May-20	0.251 L	03-Jun-20 08:21	1
PFDoA	307-55-1	ND	0.748	1.49	2.00		B0E0250	31-May-20	0.251 L	03-Jun-20 08:21	1
PFTTrDA	72629-94-8	ND	0.748	1.49	2.00		B0E0250	31-May-20	0.251 L	03-Jun-20 08:21	1
11CI-PF3OUdS	763051-92-9	ND	0.998	1.99	2.25		B0E0250	31-May-20	0.251 L	03-Jun-20 08:21	1
PFTeDA	376-06-7	ND	0.748	1.49	2.00		B0E0250	31-May-20	0.251 L	03-Jun-20 08:21	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	108	70 - 130			B0E0250	31-May-20	0.251 L	03-Jun-20 08:21	1	
13C2-PFDA	SURR	107	70 - 130			B0E0250	31-May-20	0.251 L	03-Jun-20 08:21	1	
d5-EtFOSAA	SURR	85.6	70 - 130			B0E0250	31-May-20	0.251 L	03-Jun-20 08:21	1	
13C3-HFPO-DA	SURR	120	70 - 130			B0E0250	31-May-20	0.251 L	03-Jun-20 08:21	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/1/20

Sample ID: WI-CV-1FB72-0520						EPA Method 537.1					
Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001159-12	Column:	BEH C18				
Project:	9000NVT3	Date Collected:	27-May-20 09:10	Date Received:	28-May-20 10:14						
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.748	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 08:32	1
PFHxA	307-24-4	ND	0.748	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 08:32	1
HFPO-DA	13252-13-6	ND	0.997	1.99	2.24		B0E0250	31-May-20	0.251 L	03-Jun-20 08:32	1
PFHpA	375-85-9	ND	0.748	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 08:32	1
ADONA	919005-14-4	ND	0.748	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 08:32	1
PFHxS	355-46-4	ND	0.748	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 08:32	1
PFOA	335-67-1	ND	0.748	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 08:32	1
PFNA	375-95-1	ND	0.748	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 08:32	1
PFOS	1763-23-1	ND	0.748	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 08:32	1
9CI-PF3ONS	756426-58-1	ND	0.748	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 08:32	1
PFDA	335-76-2	ND	0.748	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 08:32	1
MeFOSAA	2355-31-9	ND	0.748	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 08:32	1
EtFOSAA	2991-50-6	ND	0.748	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 08:32	1
PFUnA	2058-94-8	ND	0.748	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 08:32	1
PFDoA	307-55-1	ND	0.748	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 08:32	1
PFTTrDA	72629-94-8	ND	0.748	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 08:32	1
11CI-PF3OUdS	763051-92-9	ND	0.997	1.99	2.24		B0E0250	31-May-20	0.251 L	03-Jun-20 08:32	1
PFTeDA	376-06-7	ND	0.748	1.49	1.99		B0E0250	31-May-20	0.251 L	03-Jun-20 08:32	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	101	70 - 130			B0E0250	31-May-20	0.251 L	03-Jun-20 08:32	1	
13C2-PFDA	SURR	101	70 - 130			B0E0250	31-May-20	0.251 L	03-Jun-20 08:32	1	
d5-EtFOSAA	SURR	94.8	70 - 130			B0E0250	31-May-20	0.251 L	03-Jun-20 08:32	1	
13C3-HFPO-DA	SURR	110	70 - 130			B0E0250	31-May-20	0.251 L	03-Jun-20 08:32	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/1/20

**DATA VALIDATION SUMMARY REPORT
NAS WHIDBEY ISLAND, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon
 SDG: 2001161
 Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
 Site: NAS Whidbey Island, Residential Wells, CTO-4470, Washington
 Date: July 1, 2020

PFAS			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-A06-RW14-0520	2001161-01	Water
2	WI-A06-FB14-0520	2001161-02	Water
3	WI-A06-RW18-0520	2001161-03	Water
4	WI-A06-FB18-0520	2001161-04	Water
5	WI-AF-1RW51-0520	2001161-05	Water
6	WI-AF-1FB51-0520	2001161-06	Water
7	WI-AF-1RW33-0520	2001161-07	Water
8	WI-AF-1FB33-0520	2001161-08	Water
9	WI-CV-2RW02-0520	2001161-09	Water
10	WI-CV-2FB02-0520	2001161-10	Water
11	WI-CV-1RW34-0520	2001161-11	Water
11MS	WI-CV-1RW34-0520MS	2001161-11MS	Water
11MSD	WI-CV-1RW34-0520MSD	2001161-11MSD	Water
12	WI-CV-1FB34-0520	2001161-12	Water
13	WI-CV-1RW40-0520	2001161-13	Water
14	WI-CV-1FB40-0520	2001161-14	Water

A full data validation was performed on the analytical data for seven water samples and seven aqueous field blank samples collected on May 21-22, 2020 by CH2M Hill at the NAS Whidbey Island site in Washington. The samples were analyzed under the EPA Method “Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)”.

Specific method references are as follows:

Analysis
PFAS

Method References
USEPA Method 537.1

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, DoD Final General Data Validation Guidelines, November 2019, and the USEPA Data Review and Validation Guidelines as follows:

- The USEPA “Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537,” November 2018;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 100% of the detected results in the samples.

Data Usability Assessment

There were no serious deficiencies of data.

The data are acceptable for the intended purposes as qualified for the deficiencies detailed in this report.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contaminations and actions from other exceedances of QC criteria.

Perfluorinated Alkyl Substances (PFAS)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC sample results are summarized in the table below.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WI-A06-FB14-0520	None - ND	-	-	-
WI-A06-FB18-0520	None - ND	-	-	-
WI-AF-1FB51-0520	None - ND	-	-	-
WI-AF-1FB33-0520	None - ND	-	-	-
WI-CV-2FB02-0520	None - ND	-	-	-
WI-CV-1FB34-0520	None - ND	-	-	-
WI-CV-1FB40-0520	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values except for the following.

EDS Sample ID	Surrogate	%R	Qualifier
3	d5-EtFOSAA	67.2%	UJ

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD samples exhibited acceptable percent recoveries (%R) and RPD values except for the following.

EDS Sample ID	Compound	MS %R/MSD %R/RDP	Qualifier
11	PFOA	OK/OK/42.0	None for RPD alone

Laboratory Control Samples (LCS)

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

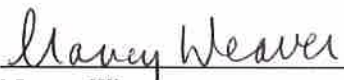
- EDS Sample 11 was analyzed at a 5X dilution for PFOA. The reporting limits were adjusted accordingly. No action was required.

Field Duplicate Sample Precision

- Field duplicate samples were not collected.

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed:


Nancy Weaver
Senior Chemist

Dated: 7/6/20

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

Sample ID: WI-A06-RW14-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001161-01	Column:	BEH C18
Project:	9000NVT3	Date Collected:	21-May-20 13:10	Date Received:	28-May-20 10:14		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	53.8	0.773	1.55	2.06		B0E0267	02-Jun-20	0.242 L	05-Jun-20 15:13	1
PFHxA	307-24-4	58.6	0.773	1.55	2.06		B0E0267	02-Jun-20	0.242 L	05-Jun-20 15:13	1
HFPO-DA	13252-13-6	ND	1.03	2.07	2.32		B0E0267	02-Jun-20	0.242 L	05-Jun-20 15:13	1
PFHpA	375-85-9	18.1	0.773	1.55	2.06		B0E0267	02-Jun-20	0.242 L	05-Jun-20 15:13	1
ADONA	919005-14-4	ND	0.773	1.55	2.06		B0E0267	02-Jun-20	0.242 L	05-Jun-20 15:13	1
PFHxS	355-46-4	252	0.773	1.55	2.06		B0E0267	02-Jun-20	0.242 L	05-Jun-20 15:13	1
PFOA	335-67-1	24.8	0.773	1.55	2.06		B0E0267	02-Jun-20	0.242 L	05-Jun-20 15:13	1
PFNA	375-95-1	ND	0.773	1.55	2.06		B0E0267	02-Jun-20	0.242 L	05-Jun-20 15:13	1
PFOS	1763-23-1	13.4	0.773	1.55	2.06		B0E0267	02-Jun-20	0.242 L	05-Jun-20 15:13	1
9CI-PF3ONS	756426-58-1	ND	0.773	1.55	2.06		B0E0267	02-Jun-20	0.242 L	05-Jun-20 15:13	1
PFDA	335-76-2	ND	0.773	1.55	2.06		B0E0267	02-Jun-20	0.242 L	05-Jun-20 15:13	1
MeFOSAA	2355-31-9	ND	0.773	1.55	2.06		B0E0267	02-Jun-20	0.242 L	05-Jun-20 15:13	1
EtFOSAA	2991-50-6	ND	0.773	1.55	2.06		B0E0267	02-Jun-20	0.242 L	05-Jun-20 15:13	1
PFUnA	2058-94-8	ND	0.773	1.55	2.06		B0E0267	02-Jun-20	0.242 L	05-Jun-20 15:13	1
PFDoA	307-55-1	ND	0.773	1.55	2.06		B0E0267	02-Jun-20	0.242 L	05-Jun-20 15:13	1
PFTTrDA	72629-94-8	ND	0.773	1.55	2.06		B0E0267	02-Jun-20	0.242 L	05-Jun-20 15:13	1
11CI-PF3OUdS	763051-92-9	ND	1.03	2.07	2.32		B0E0267	02-Jun-20	0.242 L	05-Jun-20 15:13	1
PFTeDA	376-06-7	ND	0.773	1.55	2.06		B0E0267	02-Jun-20	0.242 L	05-Jun-20 15:13	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	74.9		70 - 130			B0E0267	02-Jun-20	0.242 L	05-Jun-20 15:13	1
13C2-PFDA	SURR	81.5		70 - 130			B0E0267	02-Jun-20	0.242 L	05-Jun-20 15:13	1
d5-EtFOSAA	SURR	74.6		70 - 130			B0E0267	02-Jun-20	0.242 L	05-Jun-20 15:13	1
13C3-HFPO-DA	SURR	75.4		70 - 130			B0E0267	02-Jun-20	0.242 L	05-Jun-20 15:13	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/1/20

Sample ID: WI-A06-FB14-0520						EPA Method 537.1					
Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	2001161-02	Column:	BEH C18			
Project:	9000NVT3	Date Collected:	21-May-20 13:10		Date Received:	28-May-20 10:14					
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 13:31	1
PFHxA	307-24-4	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 13:31	1
HFPO-DA	13252-13-6	ND	1.02	2.04	2.30		B0E0267	02-Jun-20	0.245 L	04-Jun-20 13:31	1
PFHpA	375-85-9	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 13:31	1
ADONA	919005-14-4	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 13:31	1
PFHxS	355-46-4	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 13:31	1
PFOA	335-67-1	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 13:31	1
PFNA	375-95-1	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 13:31	1
PFOS	1763-23-1	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 13:31	1
9CI-PF3ONS	756426-58-1	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 13:31	1
PFDA	335-76-2	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 13:31	1
MeFOSAA	2355-31-9	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 13:31	1
EtFOSAA	2991-50-6	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 13:31	1
PFUnA	2058-94-8	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 13:31	1
PFDoA	307-55-1	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 13:31	1
PFTTrDA	72629-94-8	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 13:31	1
11CI-PF3OUdS	763051-92-9	ND	1.02	2.04	2.30		B0E0267	02-Jun-20	0.245 L	04-Jun-20 13:31	1
PFTeDA	376-06-7	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 13:31	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	76.6	70 - 130			B0E0267	02-Jun-20	0.245 L	04-Jun-20 13:31	1	
13C2-PFDA	SURR	92.7	70 - 130			B0E0267	02-Jun-20	0.245 L	04-Jun-20 13:31	1	
d5-EtFOSAA	SURR	81.6	70 - 130			B0E0267	02-Jun-20	0.245 L	04-Jun-20 13:31	1	
13C3-HFPO-DA	SURR	77.7	70 - 130			B0E0267	02-Jun-20	0.245 L	04-Jun-20 13:31	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

MW 7/1/20

Sample ID: WI-A06-RW18-0520										EPA Method 537.1	
Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	2001161-03	Column:	BEH C18			
Project:	9000NVT3	Date Collected:	21-May-20 14:10		Date Received:	28-May-20 10:14					
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	21.9	0.756	1.51	2.02		B0E0267	02-Jun-20	0.248 L	04-Jun-20 13:42	1
PFHxA	307-24-4	24.4	0.756	1.51	2.02		B0E0267	02-Jun-20	0.248 L	04-Jun-20 13:42	1
HFPO-DA	13252-13-6	ND	1.01	2.02	2.27		B0E0267	02-Jun-20	0.248 L	04-Jun-20 13:42	1
PFHpA	375-85-9	9.82	0.756	1.51	2.02		B0E0267	02-Jun-20	0.248 L	04-Jun-20 13:42	1
ADONA	919005-14-4	ND	0.756	1.51	2.02		B0E0267	02-Jun-20	0.248 L	04-Jun-20 13:42	1
PFHxS	355-46-4	91.1	0.756	1.51	2.02		B0E0267	02-Jun-20	0.248 L	04-Jun-20 13:42	1
PFOA	335-67-1	28.7	0.756	1.51	2.02		B0E0267	02-Jun-20	0.248 L	04-Jun-20 13:42	1
PFNA	375-95-1	ND	0.756	1.51	2.02		B0E0267	02-Jun-20	0.248 L	04-Jun-20 13:42	1
PFOS	1763-23-1	16.8	0.756	1.51	2.02		B0E0267	02-Jun-20	0.248 L	04-Jun-20 13:42	1
9CI-PF3ONS	756426-58-1	ND	0.756	1.51	2.02		B0E0267	02-Jun-20	0.248 L	04-Jun-20 13:42	1
PFDA	335-76-2	ND	0.756	1.51	2.02		B0E0267	02-Jun-20	0.248 L	04-Jun-20 13:42	1
MeFOSAA	2355-31-9	ND	0.756	1.51	2.02		B0E0267	02-Jun-20	0.248 L	04-Jun-20 13:42	1
EtFOSAA	2991-50-6	ND <i>u j</i>	0.756	1.51	2.02		B0E0267	02-Jun-20	0.248 L	04-Jun-20 13:42	1 <i>SSL</i>
PFUnA	2058-94-8	ND	0.756	1.51	2.02		B0E0267	02-Jun-20	0.248 L	04-Jun-20 13:42	1
PFDoA	307-55-1	ND	0.756	1.51	2.02		B0E0267	02-Jun-20	0.248 L	04-Jun-20 13:42	1
PFTTrDA	72629-94-8	ND	0.756	1.51	2.02		B0E0267	02-Jun-20	0.248 L	04-Jun-20 13:42	1
11CI-PF3OUdS	763051-92-9	ND	1.01	2.02	2.27		B0E0267	02-Jun-20	0.248 L	04-Jun-20 13:42	1
PFTeDA	376-06-7	ND	0.756	1.51	2.02		B0E0267	02-Jun-20	0.248 L	04-Jun-20 13:42	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	81.4	70 - 130			B0E0267	02-Jun-20	0.248 L	04-Jun-20 13:42	1	
13C2-PFDA	SURR	85.9	70 - 130			B0E0267	02-Jun-20	0.248 L	04-Jun-20 13:42	1	
d5-EtFOSAA	SURR	67.2	70 - 130		<i>H</i>	B0E0267	02-Jun-20	0.248 L	04-Jun-20 13:42	1	
13C3-HFPO-DA	SURR	77.3	70 - 130			B0E0267	02-Jun-20	0.248 L	04-Jun-20 13:42	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 7/11/20

Sample ID: WI-A06-FB18-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001161-04	Column:	BEH C18
Project:	9000NVT3	Date Collected:	21-May-20 14:10	Date Received:	28-May-20 10:14		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 13:53	1
PFHxA	307-24-4	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 13:53	1
HFPO-DA	13252-13-6	ND	1.03	2.06	2.32		B0E0267	02-Jun-20	0.243 L	04-Jun-20 13:53	1
PFHpA	375-85-9	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 13:53	1
ADONA	919005-14-4	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 13:53	1
PFHxS	355-46-4	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 13:53	1
PFOA	335-67-1	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 13:53	1
PFNA	375-95-1	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 13:53	1
PFOS	1763-23-1	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 13:53	1
9CI-PF3ONS	756426-58-1	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 13:53	1
PFDA	335-76-2	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 13:53	1
MeFOSAA	2355-31-9	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 13:53	1
EtFOSAA	2991-50-6	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 13:53	1
PFUnA	2058-94-8	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 13:53	1
PFDoA	307-55-1	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 13:53	1
PFTTrDA	72629-94-8	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 13:53	1
11CI-PF3OUdS	763051-92-9	ND	1.03	2.06	2.32		B0E0267	02-Jun-20	0.243 L	04-Jun-20 13:53	1
PFTeDA	376-06-7	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 13:53	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	79.3		70 - 130			B0E0267	02-Jun-20	0.243 L	04-Jun-20 13:53	1
13C2-PFDA	SURR	97.7		70 - 130			B0E0267	02-Jun-20	0.243 L	04-Jun-20 13:53	1
d5-EtFOSAA	SURR	93.9		70 - 130			B0E0267	02-Jun-20	0.243 L	04-Jun-20 13:53	1
13C3-HFPO-DA	SURR	76.6		70 - 130			B0E0267	02-Jun-20	0.243 L	04-Jun-20 13:53	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

21 Jul 20

Sample ID: WI-AF-1RW51-0520						EPA Method 537.1					
Client Data				Laboratory Data							
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001161-05	Column:	BEH C18				
Project:	9000NVT3	Date Collected:	21-May-20 14:40	Date Received:	28-May-20 10:14						
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:04	1
PFHxA	307-24-4	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:04	1
HFPO-DA	13252-13-6	ND	1.03	2.06	2.32		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:04	1
PFHpA	375-85-9	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:04	1
ADONA	919005-14-4	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:04	1
PFHxS	355-46-4	1.22	0.773	1.54	2.06	J	B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:04	1
PFOA	335-67-1	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:04	1
PFNA	375-95-1	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:04	1
PFOS	1763-23-1	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:04	1
9CI-PF3ONS	756426-58-1	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:04	1
PFDA	335-76-2	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:04	1
MeFOSAA	2355-31-9	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:04	1
EtFOSAA	2991-50-6	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:04	1
PFUnA	2058-94-8	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:04	1
PFDoA	307-55-1	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:04	1
PFTTrDA	72629-94-8	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:04	1
11CI-PF3OUdS	763051-92-9	ND	1.03	2.06	2.32		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:04	1
PFTeDA	376-06-7	ND	0.773	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:04	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	80.8	70 - 130			B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:04	1	
13C2-PFDA	SURR	93.1	70 - 130			B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:04	1	
d5-EtFOSAA	SURR	98.6	70 - 130			B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:04	1	
13C3-HFPO-DA	SURR	76.2	70 - 130			B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:04	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

new 7/1/20

Sample ID: WI-AF-1FB51-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001161-06	Column:	BEH C18
Project:	9000NVT3	Date Collected:	21-May-20 14:40	Date Received:	28-May-20 10:14		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.759	1.52	2.02		B0E0267	02-Jun-20	0.247 L	04-Jun-20 14:15	1
PFHxA	307-24-4	ND	0.759	1.52	2.02		B0E0267	02-Jun-20	0.247 L	04-Jun-20 14:15	1
HFPO-DA	13252-13-6	ND	1.01	2.02	2.28		B0E0267	02-Jun-20	0.247 L	04-Jun-20 14:15	1
PFHpA	375-85-9	ND	0.759	1.52	2.02		B0E0267	02-Jun-20	0.247 L	04-Jun-20 14:15	1
ADONA	919005-14-4	ND	0.759	1.52	2.02		B0E0267	02-Jun-20	0.247 L	04-Jun-20 14:15	1
PFHxS	355-46-4	ND	0.759	1.52	2.02		B0E0267	02-Jun-20	0.247 L	04-Jun-20 14:15	1
PFOA	335-67-1	ND	0.759	1.52	2.02		B0E0267	02-Jun-20	0.247 L	04-Jun-20 14:15	1
PFNA	375-95-1	ND	0.759	1.52	2.02		B0E0267	02-Jun-20	0.247 L	04-Jun-20 14:15	1
PFOS	1763-23-1	ND	0.759	1.52	2.02		B0E0267	02-Jun-20	0.247 L	04-Jun-20 14:15	1
9CI-PFH3ONS	756426-58-1	ND	0.759	1.52	2.02		B0E0267	02-Jun-20	0.247 L	04-Jun-20 14:15	1
PFDA	335-76-2	ND	0.759	1.52	2.02		B0E0267	02-Jun-20	0.247 L	04-Jun-20 14:15	1
MeFOSAA	2355-31-9	ND	0.759	1.52	2.02		B0E0267	02-Jun-20	0.247 L	04-Jun-20 14:15	1
EtFOSAA	2991-50-6	ND	0.759	1.52	2.02		B0E0267	02-Jun-20	0.247 L	04-Jun-20 14:15	1
PFUnA	2058-94-8	ND	0.759	1.52	2.02		B0E0267	02-Jun-20	0.247 L	04-Jun-20 14:15	1
PFDoA	307-55-1	ND	0.759	1.52	2.02		B0E0267	02-Jun-20	0.247 L	04-Jun-20 14:15	1
PFTTrDA	72629-94-8	ND	0.759	1.52	2.02		B0E0267	02-Jun-20	0.247 L	04-Jun-20 14:15	1
11CI-PF3OUdS	763051-92-9	ND	1.01	2.02	2.28		B0E0267	02-Jun-20	0.247 L	04-Jun-20 14:15	1
PFTeDA	376-06-7	ND	0.759	1.52	2.02		B0E0267	02-Jun-20	0.247 L	04-Jun-20 14:15	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	73.9	70 - 130		B0E0267	02-Jun-20	0.247 L	04-Jun-20 14:15	1
13C2-PFDA	SURR	85.3	70 - 130		B0E0267	02-Jun-20	0.247 L	04-Jun-20 14:15	1
d5-EtFOSAA	SURR	81.2	70 - 130		B0E0267	02-Jun-20	0.247 L	04-Jun-20 14:15	1
13C3-HFPO-DA	SURR	73.3	70 - 130		B0E0267	02-Jun-20	0.247 L	04-Jun-20 14:15	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nr 7/1/20

Sample ID: WI-AF-1RW33-0520						EPA Method 537.1					
Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water			Lab Sample:	2001161-07	Column:	BEH C18		
Project:	9000NVT3	Date Collected:	21-May-20 15:10			Date Received:	28-May-20 10:14				
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	65.6	0.771	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:26	1
PFHxA	307-24-4	58.2	0.771	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:26	1
HFPO-DA	13252-13-6	ND	1.03	2.06	2.31		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:26	1
PFHpA	375-85-9	1.54	0.771	1.54	2.06	J	B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:26	1
ADONA	919005-14-4	ND	0.771	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:26	1
PFHxS	355-46-4	6.37	0.771	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:26	1
PFOA	335-67-1	ND	0.771	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:26	1
PFNA	375-95-1	ND	0.771	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:26	1
PFOS	1763-23-1	ND	0.771	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:26	1
9CI-PF3ONS	756426-58-1	ND	0.771	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:26	1
PFDA	335-76-2	ND	0.771	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:26	1
MeFOSAA	2355-31-9	ND	0.771	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:26	1
EtFOSAA	2991-50-6	ND	0.771	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:26	1
PFUnA	2058-94-8	ND	0.771	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:26	1
PFDaA	307-55-1	ND	0.771	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:26	1
PFTTrDA	72629-94-8	ND	0.771	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:26	1
11CI-PF3OUdS	763051-92-9	ND	1.03	2.06	2.31		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:26	1
PFTeDA	376-06-7	ND	0.771	1.54	2.06		B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:26	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	77.6	70 - 130			B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:26	1	
13C2-PFDA	SURR	88.9	70 - 130			B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:26	1	
d5-EtFOSAA	SURR	80.0	70 - 130			B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:26	1	
13C3-HFPO-DA	SURR	78.0	70 - 130			B0E0267	02-Jun-20	0.243 L	04-Jun-20 14:26	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

MS 7/1/20

Sample ID: WI-AF-1FB33-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001161-08	Column:	BEH C18
Project:	9000NVT3	Date Collected:	21-May-20 15:10	Date Received:	28-May-20 10:14		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.755	1.51	2.01		B0E0267	02-Jun-20	0.248 L	04-Jun-20 14:37	1
PFHxA	307-24-4	ND	0.755	1.51	2.01		B0E0267	02-Jun-20	0.248 L	04-Jun-20 14:37	1
HFPO-DA	13252-13-6	ND	1.01	2.02	2.27		B0E0267	02-Jun-20	0.248 L	04-Jun-20 14:37	1
PFHpA	375-85-9	ND	0.755	1.51	2.01		B0E0267	02-Jun-20	0.248 L	04-Jun-20 14:37	1
ADONA	919005-14-4	ND	0.755	1.51	2.01		B0E0267	02-Jun-20	0.248 L	04-Jun-20 14:37	1
PFHxS	355-46-4	ND	0.755	1.51	2.01		B0E0267	02-Jun-20	0.248 L	04-Jun-20 14:37	1
PFOA	335-67-1	ND	0.755	1.51	2.01		B0E0267	02-Jun-20	0.248 L	04-Jun-20 14:37	1
PFNA	375-95-1	ND	0.755	1.51	2.01		B0E0267	02-Jun-20	0.248 L	04-Jun-20 14:37	1
PFOS	1763-23-1	ND	0.755	1.51	2.01		B0E0267	02-Jun-20	0.248 L	04-Jun-20 14:37	1
9Cl-PF3ONS	756426-58-1	ND	0.755	1.51	2.01		B0E0267	02-Jun-20	0.248 L	04-Jun-20 14:37	1
PFDA	335-76-2	ND	0.755	1.51	2.01		B0E0267	02-Jun-20	0.248 L	04-Jun-20 14:37	1
MeFOSAA	2355-31-9	ND	0.755	1.51	2.01		B0E0267	02-Jun-20	0.248 L	04-Jun-20 14:37	1
EtFOSAA	2991-50-6	ND	0.755	1.51	2.01		B0E0267	02-Jun-20	0.248 L	04-Jun-20 14:37	1
PFUnA	2058-94-8	ND	0.755	1.51	2.01		B0E0267	02-Jun-20	0.248 L	04-Jun-20 14:37	1
PFDoA	307-55-1	ND	0.755	1.51	2.01		B0E0267	02-Jun-20	0.248 L	04-Jun-20 14:37	1
PFTrDA	72629-94-8	ND	0.755	1.51	2.01		B0E0267	02-Jun-20	0.248 L	04-Jun-20 14:37	1
11Cl-PF3OUdS	763051-92-9	ND	1.01	2.02	2.27		B0E0267	02-Jun-20	0.248 L	04-Jun-20 14:37	1
PFTeDA	376-06-7	ND	0.755	1.51	2.01		B0E0267	02-Jun-20	0.248 L	04-Jun-20 14:37	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	77.5	70 - 130			B0E0267	02-Jun-20	0.248 L	04-Jun-20 14:37	1	
13C2-PFDA	SURR	87.4	70 - 130			B0E0267	02-Jun-20	0.248 L	04-Jun-20 14:37	1	
d5-EtFOSAA	SURR	86.1	70 - 130			B0E0267	02-Jun-20	0.248 L	04-Jun-20 14:37	1	
13C3-HFPO-DA	SURR	76.3	70 - 130			B0E0267	02-Jun-20	0.248 L	04-Jun-20 14:37	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/1/20

Sample ID: WI-CV-2RW02-0520						EPA Method 537.1					
Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	2001161-09	Column:	BEH C18			
Project:	9000NVT3	Date Collected:	22-May-20 09:00		Date Received:	28-May-20 10:14					
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	18.1	0.748	1.49	2.00		B0E0267	02-Jun-20	0.251 L	04-Jun-20 14:48	1
PFHxA	307-24-4	63.9	0.748	1.49	2.00		B0E0267	02-Jun-20	0.251 L	04-Jun-20 14:48	1
HFPO-DA	13252-13-6	ND	0.998	1.99	2.25		B0E0267	02-Jun-20	0.251 L	04-Jun-20 14:48	1
PFHpA	375-85-9	16.6	0.748	1.49	2.00		B0E0267	02-Jun-20	0.251 L	04-Jun-20 14:48	1
ADONA	919005-14-4	ND	0.748	1.49	2.00		B0E0267	02-Jun-20	0.251 L	04-Jun-20 14:48	1
PFHxS	355-46-4	49.6	0.748	1.49	2.00		B0E0267	02-Jun-20	0.251 L	04-Jun-20 14:48	1
PFOA	335-67-1	231	0.748	1.49	2.00		B0E0267	02-Jun-20	0.251 L	04-Jun-20 14:48	1
PFNA	375-95-1	ND	0.748	1.49	2.00		B0E0267	02-Jun-20	0.251 L	04-Jun-20 14:48	1
PFOS	1763-23-1	ND	0.748	1.49	2.00		B0E0267	02-Jun-20	0.251 L	04-Jun-20 14:48	1
9CI-PF3ONS	756426-58-1	ND	0.748	1.49	2.00		B0E0267	02-Jun-20	0.251 L	04-Jun-20 14:48	1
PFDA	335-76-2	ND	0.748	1.49	2.00		B0E0267	02-Jun-20	0.251 L	04-Jun-20 14:48	1
MeFOSAA	2355-31-9	ND	0.748	1.49	2.00		B0E0267	02-Jun-20	0.251 L	04-Jun-20 14:48	1
EtFOSAA	2991-50-6	ND	0.748	1.49	2.00		B0E0267	02-Jun-20	0.251 L	04-Jun-20 14:48	1
PFUnA	2058-94-8	ND	0.748	1.49	2.00		B0E0267	02-Jun-20	0.251 L	04-Jun-20 14:48	1
PFDoA	307-55-1	ND	0.748	1.49	2.00		B0E0267	02-Jun-20	0.251 L	04-Jun-20 14:48	1
PFTrDA	72629-94-8	ND	0.748	1.49	2.00		B0E0267	02-Jun-20	0.251 L	04-Jun-20 14:48	1
11CI-PF3OUdS	763051-92-9	ND	0.998	1.99	2.25		B0E0267	02-Jun-20	0.251 L	04-Jun-20 14:48	1
PFTeDA	376-06-7	ND	0.748	1.49	2.00		B0E0267	02-Jun-20	0.251 L	04-Jun-20 14:48	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	73.3	70 - 130			B0E0267	02-Jun-20	0.251 L	04-Jun-20 14:48	1	
13C2-PFDA	SURR	84.2	70 - 130			B0E0267	02-Jun-20	0.251 L	04-Jun-20 14:48	1	
d5-EtFOSAA	SURR	82.7	70 - 130			B0E0267	02-Jun-20	0.251 L	04-Jun-20 14:48	1	
13C3-HFPO-DA	SURR	72.2	70 - 130			B0E0267	02-Jun-20	0.251 L	04-Jun-20 14:48	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL...

LOQ - Limit of quantitation

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

New 7/1/20

Sample ID: WI-CV-2FB02-0520						EPA Method 537.1					
Client Data				Laboratory Data							
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001161-10	Column:	BEH C18				
Project:	9000NVT3	Date Collected:	22-May-20 09:00	Date Received:	28-May-20 10:14						
Location:	Drinking Water										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	05-Jun-20 15:35	1
PFHxA	307-24-4	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	05-Jun-20 15:35	1
HFPO-DA	13252-13-6	ND	1.02	2.05	2.30		B0E0267	02-Jun-20	0.244 L	05-Jun-20 15:35	1
PFHpA	375-85-9	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	05-Jun-20 15:35	1
ADONA	919005-14-4	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	05-Jun-20 15:35	1
PFHxS	355-46-4	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	05-Jun-20 15:35	1
PFOA	335-67-1	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	05-Jun-20 15:35	1
PFNA	375-95-1	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	05-Jun-20 15:35	1
PFOS	1763-23-1	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	05-Jun-20 15:35	1
9CI-PF3ONS	756426-58-1	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	05-Jun-20 15:35	1
PFDA	335-76-2	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	05-Jun-20 15:35	1
MeFOSAA	2355-31-9	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	05-Jun-20 15:35	1
EtFOSAA	2991-50-6	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	05-Jun-20 15:35	1
PFUnA	2058-94-8	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	05-Jun-20 15:35	1
PFDoA	307-55-1	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	05-Jun-20 15:35	1
PFTTrDA	72629-94-8	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	05-Jun-20 15:35	1
11CI-PF3OUdS	763051-92-9	ND	1.02	2.05	2.30		B0E0267	02-Jun-20	0.244 L	05-Jun-20 15:35	1
PFTeDA	376-06-7	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	05-Jun-20 15:35	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	72.4	70 - 130			B0E0267	02-Jun-20	0.244 L	05-Jun-20 15:35	1	
13C2-PFDA	SURR	84.3	70 - 130			B0E0267	02-Jun-20	0.244 L	05-Jun-20 15:35	1	
d5-EtFOSAA	SURR	78.8	70 - 130			B0E0267	02-Jun-20	0.244 L	05-Jun-20 15:35	1	
13C3-HFPO-DA	SURR	73.5	70 - 130			B0E0267	02-Jun-20	0.244 L	05-Jun-20 15:35	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 7/1/20

Sample ID: WI-CV-1RW34-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001161-11	Column:	BEH C18
Project:	9000NVT3	Date Collected:	22-May-20 10:10	Date Received:	28-May-20 10:14		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	109	0.733	1.46	1.95		B0E0267	02-Jun-20	0.256 L	04-Jun-20 15:10	1
PFHxA	307-24-4	211	0.733	1.46	1.95		B0E0267	02-Jun-20	0.256 L	04-Jun-20 15:10	1
HFPO-DA	13252-13-6	ND	0.977	1.95	2.20		B0E0267	02-Jun-20	0.256 L	04-Jun-20 15:10	1
PFHpA	375-85-9	30.7	0.733	1.46	1.95		B0E0267	02-Jun-20	0.256 L	04-Jun-20 15:10	1
ADONA	919005-14-4	ND	0.733	1.46	1.95		B0E0267	02-Jun-20	0.256 L	04-Jun-20 15:10	1
PFHxS	355-46-4	111	0.733	1.46	1.95		B0E0267	02-Jun-20	0.256 L	04-Jun-20 15:10	1
PFOA	335-67-1	409	3.66	7.32	9.77	Ø	B0E0267	02-Jun-20	0.256 L	05-Jun-20 15:46	5
PFNA	375-95-1	ND	0.733	1.46	1.95		B0E0267	02-Jun-20	0.256 L	04-Jun-20 15:10	1
PFOS	1763-23-1	ND	0.733	1.46	1.95		B0E0267	02-Jun-20	0.256 L	04-Jun-20 15:10	1
9CI-PF3ONS	756426-58-1	ND	0.733	1.46	1.95		B0E0267	02-Jun-20	0.256 L	04-Jun-20 15:10	1
PFDA	335-76-2	ND	0.733	1.46	1.95		B0E0267	02-Jun-20	0.256 L	04-Jun-20 15:10	1
MeFOSAA	2355-31-9	ND	0.733	1.46	1.95		B0E0267	02-Jun-20	0.256 L	04-Jun-20 15:10	1
EtFOSAA	2991-50-6	1.18	0.733	1.46	1.95	J	B0E0267	02-Jun-20	0.256 L	04-Jun-20 15:10	1
PFUnA	2058-94-8	ND	0.733	1.46	1.95		B0E0267	02-Jun-20	0.256 L	04-Jun-20 15:10	1
PFDoA	307-55-1	ND	0.733	1.46	1.95		B0E0267	02-Jun-20	0.256 L	04-Jun-20 15:10	1
PFTTrDA	72629-94-8	ND	0.733	1.46	1.95		B0E0267	02-Jun-20	0.256 L	04-Jun-20 15:10	1
11CI-PF3OUdS	763051-92-9	ND	0.977	1.95	2.20		B0E0267	02-Jun-20	0.256 L	04-Jun-20 15:10	1
PFTeDA	376-06-7	ND	0.733	1.46	1.95		B0E0267	02-Jun-20	0.256 L	04-Jun-20 15:10	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	74.7	70 - 130			B0E0267	02-Jun-20	0.256 L	04-Jun-20 15:10	1	
13C2-PFDA	SURR	90.2	70 - 130			B0E0267	02-Jun-20	0.256 L	04-Jun-20 15:10	1	
d5-EtFOSAA	SURR	83.7	70 - 130			B0E0267	02-Jun-20	0.256 L	04-Jun-20 15:10	1	
13C3-HFPO-DA	SURR	75.9	70 - 130			B0E0267	02-Jun-20	0.256 L	04-Jun-20 15:10	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

MW 7/1/20

Sample ID: WI-CV-1FB34-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001161-12	Column:	BEH C18
Project:	9000NVT3	Date Collected:	22-May-20 10:10	Date Received:	28-May-20 10:14		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 15:21	1
PFHxA	307-24-4	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 15:21	1
HFPO-DA	13252-13-6	ND	1.02	2.04	2.29		B0E0267	02-Jun-20	0.245 L	04-Jun-20 15:21	1
PFHpA	375-85-9	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 15:21	1
ADONA	919005-14-4	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 15:21	1
PFHxS	355-46-4	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 15:21	1
PFOA	335-67-1	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 15:21	1
PFNA	375-95-1	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 15:21	1
PFOS	1763-23-1	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 15:21	1
9CI-PF3ONS	756426-58-1	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 15:21	1
PFDA	335-76-2	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 15:21	1
MeFOSAA	2355-31-9	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 15:21	1
EtFOSAA	2991-50-6	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 15:21	1
PFUnA	2058-94-8	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 15:21	1
PFDoA	307-55-1	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 15:21	1
PFTTrDA	72629-94-8	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 15:21	1
11CI-PF3OUdS	763051-92-9	ND	1.02	2.04	2.29		B0E0267	02-Jun-20	0.245 L	04-Jun-20 15:21	1
PFTeDA	376-06-7	ND	0.765	1.53	2.04		B0E0267	02-Jun-20	0.245 L	04-Jun-20 15:21	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	74.7	70 - 130			B0E0267	02-Jun-20	0.245 L	04-Jun-20 15:21	1	
13C2-PFDA	SURR	90.5	70 - 130			B0E0267	02-Jun-20	0.245 L	04-Jun-20 15:21	1	
d5-EtFOSAA	SURR	80.7	70 - 130			B0E0267	02-Jun-20	0.245 L	04-Jun-20 15:21	1	
13C3-HFPO-DA	SURR	75.2	70 - 130			B0E0267	02-Jun-20	0.245 L	04-Jun-20 15:21	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

MW 7/1/20

Sample ID: WI-CV-1RW40-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001161-13	Column:	BEH C18
Project:	9000NVT3	Date Collected:	22-May-20 11:10	Date Received:	28-May-20 10:14		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.777	1.56	2.07		B0E0267	02-Jun-20	0.241 L	04-Jun-20 15:32	1
PFHxA	307-24-4	ND	0.777	1.56	2.07		B0E0267	02-Jun-20	0.241 L	04-Jun-20 15:32	1
HFPO-DA	13252-13-6	ND	1.04	2.07	2.33		B0E0267	02-Jun-20	0.241 L	04-Jun-20 15:32	1
PFHpA	375-85-9	ND	0.777	1.56	2.07		B0E0267	02-Jun-20	0.241 L	04-Jun-20 15:32	1
ADONA	919005-14-4	ND	0.777	1.56	2.07		B0E0267	02-Jun-20	0.241 L	04-Jun-20 15:32	1
PFHxS	355-46-4	ND	0.777	1.56	2.07		B0E0267	02-Jun-20	0.241 L	04-Jun-20 15:32	1
PFOA	335-67-1	ND	0.777	1.56	2.07		B0E0267	02-Jun-20	0.241 L	04-Jun-20 15:32	1
PFNA	375-95-1	ND	0.777	1.56	2.07		B0E0267	02-Jun-20	0.241 L	04-Jun-20 15:32	1
PFOS	1763-23-1	ND	0.777	1.56	2.07		B0E0267	02-Jun-20	0.241 L	04-Jun-20 15:32	1
9Cl-PF3ONS	756426-58-1	ND	0.777	1.56	2.07		B0E0267	02-Jun-20	0.241 L	04-Jun-20 15:32	1
PFDA	335-76-2	ND	0.777	1.56	2.07		B0E0267	02-Jun-20	0.241 L	04-Jun-20 15:32	1
MeFOSAA	2355-31-9	ND	0.777	1.56	2.07		B0E0267	02-Jun-20	0.241 L	04-Jun-20 15:32	1
EtFOSAA	2991-50-6	ND	0.777	1.56	2.07		B0E0267	02-Jun-20	0.241 L	04-Jun-20 15:32	1
PFUnA	2058-94-8	ND	0.777	1.56	2.07		B0E0267	02-Jun-20	0.241 L	04-Jun-20 15:32	1
PFDoA	307-55-1	ND	0.777	1.56	2.07		B0E0267	02-Jun-20	0.241 L	04-Jun-20 15:32	1
PFTTrDA	72629-94-8	ND	0.777	1.56	2.07		B0E0267	02-Jun-20	0.241 L	04-Jun-20 15:32	1
11Cl-PF3OUdS	763051-92-9	ND	1.04	2.07	2.33		B0E0267	02-Jun-20	0.241 L	04-Jun-20 15:32	1
PFTeDA	376-06-7	ND	0.777	1.56	2.07		B0E0267	02-Jun-20	0.241 L	04-Jun-20 15:32	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	72.5	70 - 130			B0E0267	02-Jun-20	0.241 L	04-Jun-20 15:32	1	
13C2-PFDA	SURR	86.6	70 - 130			B0E0267	02-Jun-20	0.241 L	04-Jun-20 15:32	1	
d5-EtFOSAA	SURR	86.9	70 - 130			B0E0267	02-Jun-20	0.241 L	04-Jun-20 15:32	1	
13C3-HFPO-DA	SURR	73.5	70 - 130			B0E0267	02-Jun-20	0.241 L	04-Jun-20 15:32	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/1/20

Sample ID: WI-CV-1FB40-0520

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001161-14	Column:	BEH C18
Project:	9000NVT3	Date Collected:	22-May-20 11:10	Date Received:	28-May-20 10:14		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	04-Jun-20 15:44	1
PFHxA	307-24-4	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	04-Jun-20 15:44	1
HFPO-DA	13252-13-6	ND	1.02	2.05	2.30		B0E0267	02-Jun-20	0.244 L	04-Jun-20 15:44	1
PFHpA	375-85-9	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	04-Jun-20 15:44	1
ADONA	919005-14-4	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	04-Jun-20 15:44	1
PFHxS	355-46-4	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	04-Jun-20 15:44	1
PFOA	335-67-1	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	04-Jun-20 15:44	1
PFNA	375-95-1	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	04-Jun-20 15:44	1
PFOS	1763-23-1	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	04-Jun-20 15:44	1
9CI-PF3ONS	756426-58-1	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	04-Jun-20 15:44	1
PFDA	335-76-2	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	04-Jun-20 15:44	1
MeFOSAA	2355-31-9	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	04-Jun-20 15:44	1
EtFOSAA	2991-50-6	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	04-Jun-20 15:44	1
PFUnA	2058-94-8	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	04-Jun-20 15:44	1
PFDoA	307-55-1	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	04-Jun-20 15:44	1
PFTrDA	72629-94-8	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	04-Jun-20 15:44	1
11CI-PF3OUdS	763051-92-9	ND	1.02	2.05	2.30		B0E0267	02-Jun-20	0.244 L	04-Jun-20 15:44	1
PFTeDA	376-06-7	ND	0.768	1.54	2.05		B0E0267	02-Jun-20	0.244 L	04-Jun-20 15:44	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	72.7	70 - 130			B0E0267	02-Jun-20	0.244 L	04-Jun-20 15:44	1	
13C2-PFDA	SURR	91.2	70 - 130			B0E0267	02-Jun-20	0.244 L	04-Jun-20 15:44	1	
d5-EtFOSAA	SURR	82.0	70 - 130			B0E0267	02-Jun-20	0.244 L	04-Jun-20 15:44	1	
13C3-HFPO-DA	SURR	72.1	70 - 130			B0E0267	02-Jun-20	0.244 L	04-Jun-20 15:44	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

ms 7/1/20

**DATA VALIDATION SUMMARY REPORT
NAS WHIDBEY ISLAND, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon
 SDG: 2001308
 Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
 Site: NAS Whidbey Island, Residential Wells, CTO-4470, Washington
 Date: July 8, 2020

PFAS			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-AF-1RW32-0620	2001308-02	Water
2	WI-AF-1RW32P-0620	2001308-03	Water
3	WI-AF-1FB32-0620	2001308-04	Water

A full data validation was performed on the analytical data for two water samples and one aqueous field blank samples collected on June 18, 2020 by CH2M Hill at the NAS Whidbey Island site in Washington. The samples were analyzed under the EPA Method “Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)”.

Specific method references are as follows:

Analysis
PFAS

Method References
USEPA Method 537.1

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, DoD Final General Data Validation Guidelines, November 2019, and the USEPA Data Review and Validation Guidelines as follows:

- The USEPA “Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537,” November 2018;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination

- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 100% of the detected results in the samples.

Data Usability Assessment

There were no serious deficiencies of data.

The data are acceptable for the intended purposes. There were no qualifications.

Perfluorinated Alkyl Substances (PFAS)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC sample results are summarized in the table below.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WI-AF-1FB32-0620	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- MS/MSD samples were not analyzed.

Laboratory Control Samples (LCS)

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- Two compounds in EDS Samples 1 and 2 were analyzed at a 50X and a 100X dilution due to high concentrations. The reporting limits were adjusted accordingly. No action was required.

Field Duplicate Sample Precision

- Field duplicate samples are summarized below. The precision was acceptable.

Compound	WI-AF-1RW32-0620 ng/L	WI-AF-1RW32P-0620 ng/L	RPD	Qualifier
PFBS	1720	1670	3%	None
PFHxA	793	783	1%	
PFHpA	87.3	84.4	3%	
PFHxS	8130	8620	6%	
PFOA	251	247	2%	
PFNA	2.12	2.00	6%	
PFOS	43100	42300	2%	
PFDA	1.17	1.12	4%	

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed: Nancy Weaver
Nancy Weaver
Senior Chemist

Dated: 7/11/20

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

Sample ID: WI-AF-1RW32-0620

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001308-02	Column:	BEH C18
Project:	9000NVT3	Date Collected:	18-Jun-20 11:15	Date Received:	19-Jun-20 09:23		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	1720	0.782	1.56	2.09		B0F0191	27-Jun-20	0.240 L	29-Jun-20 16:44	1
PFHxA	307-24-4	793	0.782	1.56	2.09		B0F0191	27-Jun-20	0.240 L	29-Jun-20 16:44	1
HFPO-DA	13252-13-6	ND	1.04	2.08	2.35		B0F0191	27-Jun-20	0.240 L	29-Jun-20 16:44	1
PFHpA	375-85-9	87.3	0.782	1.56	2.09		B0F0191	27-Jun-20	0.240 L	29-Jun-20 16:44	1
ADONA	919005-14-4	ND	0.782	1.56	2.09		B0F0191	27-Jun-20	0.240 L	29-Jun-20 16:44	1
PFHxS	355-46-4	8130	39.1	78.1	104	Ø	B0F0191	27-Jun-20	0.240 L	02-Jul-20 13:58	50
PFOA	335-67-1	251	0.782	1.56	2.09		B0F0191	27-Jun-20	0.240 L	29-Jun-20 16:44	1
PFNA	375-95-1	2.12	0.782	1.56	2.09		B0F0191	27-Jun-20	0.240 L	29-Jun-20 16:44	1
PFOS	1763-23-1	43100	78.2	156	209	Ø	B0F0191	27-Jun-20	0.240 L	02-Jul-20 15:27	100
9CI-PF3ONS	756426-58-1	ND	0.782	1.56	2.09		B0F0191	27-Jun-20	0.240 L	29-Jun-20 16:44	1
PFDA	335-76-2	1.17	0.782	1.56	2.09	J	B0F0191	27-Jun-20	0.240 L	29-Jun-20 16:44	1
MeFOSAA	2355-31-9	ND	0.782	1.56	2.09		B0F0191	27-Jun-20	0.240 L	29-Jun-20 16:44	1
EtFOSAA	2991-50-6	ND	0.782	1.56	2.09		B0F0191	27-Jun-20	0.240 L	29-Jun-20 16:44	1
PFUnA	2058-94-8	ND	0.782	1.56	2.09		B0F0191	27-Jun-20	0.240 L	29-Jun-20 16:44	1
PFDoA	307-55-1	ND	0.782	1.56	2.09		B0F0191	27-Jun-20	0.240 L	29-Jun-20 16:44	1
PFTTrDA	72629-94-8	ND	0.782	1.56	2.09		B0F0191	27-Jun-20	0.240 L	29-Jun-20 16:44	1
11CI-PF3OUdS	763051-92-9	ND	1.04	2.08	2.35		B0F0191	27-Jun-20	0.240 L	29-Jun-20 16:44	1
PFTeDA	376-06-7	ND	0.782	1.56	2.09		B0F0191	27-Jun-20	0.240 L	29-Jun-20 16:44	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	98.3	70 - 130		B0F0191	27-Jun-20	0.240 L	29-Jun-20 16:44	1
13C2-PFDA	SURR	95.4	70 - 130		B0F0191	27-Jun-20	0.240 L	29-Jun-20 16:44	1
d5-EtFOSAA	SURR	75.3	70 - 130		B0F0191	27-Jun-20	0.240 L	29-Jun-20 16:44	1
13C3-HFPO-DA	SURR	100	70 - 130		B0F0191	27-Jun-20	0.240 L	29-Jun-20 16:44	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 7/8/20

Sample ID: WI-AF-1RW32P-0620

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001308-03	Column:	BEH C18
Project:	9000NVT3	Date Collected:	18-Jun-20 11:30	Date Received:	19-Jun-20 09:23		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	1670	0.773	1.55	2.06		B0F0191	27-Jun-20	0.242 L	29-Jun-20 16:55	1
PFHxA	307-24-4	783	0.773	1.55	2.06		B0F0191	27-Jun-20	0.242 L	29-Jun-20 16:55	1
HFPO-DA	13252-13-6	ND	1.03	2.07	2.32		B0F0191	27-Jun-20	0.242 L	29-Jun-20 16:55	1
PFHpA	375-85-9	84.4	0.773	1.55	2.06		B0F0191	27-Jun-20	0.242 L	29-Jun-20 16:55	1
ADONA	919005-14-4	ND	0.773	1.55	2.06		B0F0191	27-Jun-20	0.242 L	29-Jun-20 16:55	1
PFHxS	355-46-4	8620	38.7	77.5	103	∅	B0F0191	27-Jun-20	0.242 L	02-Jul-20 14:40	50
PFOA	335-67-1	247	0.773	1.55	2.06		B0F0191	27-Jun-20	0.242 L	29-Jun-20 16:55	1
PFNA	375-95-1	2.00	0.773	1.55	2.06	J	B0F0191	27-Jun-20	0.242 L	29-Jun-20 16:55	1
PFOS	1763-23-1	42300	77.3	155	206	∅	B0F0191	27-Jun-20	0.242 L	02-Jul-20 15:49	100
9CI-PF3ONS	756426-58-1	ND	0.773	1.55	2.06		B0F0191	27-Jun-20	0.242 L	29-Jun-20 16:55	1
PFDA	335-76-2	1.12	0.773	1.55	2.06	J	B0F0191	27-Jun-20	0.242 L	29-Jun-20 16:55	1
MeFOSAA	2355-31-9	ND	0.773	1.55	2.06		B0F0191	27-Jun-20	0.242 L	29-Jun-20 16:55	1
EtFOSAA	2991-50-6	ND	0.773	1.55	2.06		B0F0191	27-Jun-20	0.242 L	29-Jun-20 16:55	1
PFUnA	2058-94-8	ND	0.773	1.55	2.06		B0F0191	27-Jun-20	0.242 L	29-Jun-20 16:55	1
PFDoA	307-55-1	ND	0.773	1.55	2.06		B0F0191	27-Jun-20	0.242 L	29-Jun-20 16:55	1
PFTTrDA	72629-94-8	ND	0.773	1.55	2.06		B0F0191	27-Jun-20	0.242 L	29-Jun-20 16:55	1
11CI-PF3OUdS	763051-92-9	ND	1.03	2.07	2.32		B0F0191	27-Jun-20	0.242 L	29-Jun-20 16:55	1
PFTeDA	376-06-7	ND	0.773	1.55	2.06		B0F0191	27-Jun-20	0.242 L	29-Jun-20 16:55	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.9	70 - 130		B0F0191	27-Jun-20	0.242 L	29-Jun-20 16:55	1
13C2-PFDA	SURR	91.4	70 - 130		B0F0191	27-Jun-20	0.242 L	29-Jun-20 16:55	1
d5-EtFOSAA	SURR	83.6	70 - 130		B0F0191	27-Jun-20	0.242 L	29-Jun-20 16:55	1
13C3-HFPO-DA	SURR	98.7	70 - 130		B0F0191	27-Jun-20	0.242 L	29-Jun-20 16:55	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

mw 7/18/20

Sample ID: WI-AF-1FB32-0620

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001308-04	Column:	BEH C18
Project:	9000NVT3	Date Collected:	18-Jun-20 10:45	Date Received:	19-Jun-20 09:23		
Location:	DW						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.758	1.52	2.02		B0F0191	27-Jun-20	0.247 L	29-Jun-20 17:06	1
PFHxA	307-24-4	ND	0.758	1.52	2.02		B0F0191	27-Jun-20	0.247 L	29-Jun-20 17:06	1
HFPO-DA	13252-13-6	ND	1.01	2.02	2.28		B0F0191	27-Jun-20	0.247 L	29-Jun-20 17:06	1
PFHpA	375-85-9	ND	0.758	1.52	2.02		B0F0191	27-Jun-20	0.247 L	29-Jun-20 17:06	1
ADONA	919005-14-4	ND	0.758	1.52	2.02		B0F0191	27-Jun-20	0.247 L	29-Jun-20 17:06	1
PFHxS	355-46-4	ND	0.758	1.52	2.02		B0F0191	27-Jun-20	0.247 L	29-Jun-20 17:06	1
PFOA	335-67-1	ND	0.758	1.52	2.02		B0F0191	27-Jun-20	0.247 L	29-Jun-20 17:06	1
PFNA	375-95-1	ND	0.758	1.52	2.02		B0F0191	27-Jun-20	0.247 L	29-Jun-20 17:06	1
PFOS	1763-23-1	ND	0.758	1.52	2.02		B0F0191	27-Jun-20	0.247 L	29-Jun-20 17:06	1
9CI-PF3ONS	756426-58-1	ND	0.758	1.52	2.02		B0F0191	27-Jun-20	0.247 L	29-Jun-20 17:06	1
PFDA	335-76-2	ND	0.758	1.52	2.02		B0F0191	27-Jun-20	0.247 L	29-Jun-20 17:06	1
MeFOSAA	2355-31-9	ND	0.758	1.52	2.02		B0F0191	27-Jun-20	0.247 L	29-Jun-20 17:06	1
EtFOSAA	2991-50-6	ND	0.758	1.52	2.02		B0F0191	27-Jun-20	0.247 L	29-Jun-20 17:06	1
PFUnA	2058-94-8	ND	0.758	1.52	2.02		B0F0191	27-Jun-20	0.247 L	29-Jun-20 17:06	1
PFDoA	307-55-1	ND	0.758	1.52	2.02		B0F0191	27-Jun-20	0.247 L	29-Jun-20 17:06	1
PFTTrDA	72629-94-8	ND	0.758	1.52	2.02		B0F0191	27-Jun-20	0.247 L	29-Jun-20 17:06	1
11CI-PF3OUdS	763051-92-9	ND	1.01	2.02	2.28		B0F0191	27-Jun-20	0.247 L	29-Jun-20 17:06	1
PFTeDA	376-06-7	ND	0.758	1.52	2.02		B0F0191	27-Jun-20	0.247 L	29-Jun-20 17:06	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	96.3	70 - 130		B0F0191	27-Jun-20	0.247 L	29-Jun-20 17:06	1
13C2-PFDA	SURR	91.7	70 - 130		B0F0191	27-Jun-20	0.247 L	29-Jun-20 17:06	1
d5-EtFOSAA	SURR	80.2	70 - 130		B0F0191	27-Jun-20	0.247 L	29-Jun-20 17:06	1
13C3-HFPO-DA	SURR	97.9	70 - 130		B0F0191	27-Jun-20	0.247 L	29-Jun-20 17:06	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

Results reported to the DL.

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

MW 7/18/20

**DATA VALIDATION SUMMARY REPORT
NAS WHIDBEY ISLAND, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon
 SDG: 2001636
 Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
 Site: NAS Whidbey Island, Residential Wells, CTO-4470, Washington
 Date: August 26, 2020

PFAS			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-CV-1RW92-0720	2001636-01	Water
1MS	WI-CV-1RW92-0720MS	2001636-01MS	Water
1MSD	WI-CV-1RW92-0720MSD	2001636-01MSD	Water
2	WI-CV-1FB92-0720	2001636-02	Water

A full data validation was performed on the analytical data for one water sample and one aqueous field blank sample collected on July 31, 2020 by CH2M Hill at the NAS Whidbey Island site in Washington. The samples were analyzed under the EPA Method “Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)”.

Specific method references are as follows:

Analysis
PFAS

Method References
USEPA Method 537.1

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, DoD Final General Data Validation Guidelines, November 2019, and the USEPA Data Review and Validation Guidelines as follows:

- The USEPA “Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537,” November 2018;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries

- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Stage 2B/4) data validation was performed with this review including a recalculation of 100% of the detected results in the samples.

Data Usability Assessment

There were no serious deficiencies of data.

The data are acceptable for the intended purposes. There were no qualifications.

Perfluorinated Alkyl Substances (PFAS)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC sample results are summarized in the table below.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WI-CV-1FB92-0720	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD samples exhibited acceptable percent recoveries (%R) and RPD values.

Laboratory Control Samples (LCS)

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

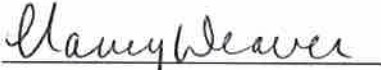
Compound Quantitation

- All criteria were met.

Field Duplicate Sample Precision

- Field duplicate samples were not collected.

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed: 
Nancy Weaver
Senior Chemist

Dated: 8/27/20

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

Sample ID: WI-CV-1RW92-0720

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001636-01	Column:	BEH C18
Project:	9000NVT3	Date Collected:	31-Jul-20 11:10	Date Received:	04-Aug-20 11:08		
Location:	Drinking Water						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.757	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:17	1
PFHxA	307-24-4	ND	0.757	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:17	1
HFPO-DA	13252-13-6	ND	1.01	2.02	2.27		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:17	1
PFHpA	375-85-9	ND	0.757	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:17	1
ADONA	919005-14-4	ND	0.757	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:17	1
PFHxS	355-46-4	ND	0.757	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:17	1
PFOA	335-67-1	ND	0.757	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:17	1
PFNA	375-95-1	ND	0.757	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:17	1
PFOS	1763-23-1	ND	0.757	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:17	1
9CI-PF3ONS	756426-58-1	ND	0.757	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:17	1
PFDA	335-76-2	ND	0.757	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:17	1
MeFOSAA	2355-31-9	ND	0.757	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:17	1
EtFOSAA	2991-50-6	ND	0.757	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:17	1
PFUnA	2058-94-8	ND	0.757	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:17	1
PFDoA	307-55-1	ND	0.757	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:17	1
PFTTrDA	72629-94-8	ND	0.757	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:17	1
11CI-PF3OUdS	763051-92-9	ND	1.01	2.02	2.27		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:17	1
PFTeDA	376-06-7	ND	0.757	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:17	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	105	70 - 130			B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:17	1	
13C2-PFDA	SURR	94.5	70 - 130			B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:17	1	
d5-EtFOSAA	SURR	85.9	70 - 130			B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:17	1	
13C3-HFPO-DA	SURR	113	70 - 130			B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:17	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

MW 8/25/20

Sample ID: WI-CV-1FB92-0720											EPA Method 537.1	
Client Data						Laboratory Data						
Name:	CH2M Hill			Matrix:	Drinking Water		Lab Sample:	2001636-02		Column:	BEH C18	
Project:	9000NVT3			Date Collected:	31-Jul-20 11:10		Date Received:	04-Aug-20 11:08				
Location:	Drinking Water											
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBS	375-73-5	ND	0.756	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:28	1	
PFHxA	307-24-4	ND	0.756	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:28	1	
HFPO-DA	13252-13-6	ND	1.01	2.02	2.27		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:28	1	
PFHpA	375-85-9	ND	0.756	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:28	1	
ADONA	919005-14-4	ND	0.756	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:28	1	
PFHxS	355-46-4	ND	0.756	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:28	1	
PFOA	335-67-1	ND	0.756	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:28	1	
PFNA	375-95-1	ND	0.756	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:28	1	
PFOS	1763-23-1	ND	0.756	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:28	1	
9Cl-PF3ONS	756426-58-1	ND	0.756	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:28	1	
PFDA	335-76-2	ND	0.756	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:28	1	
MeFOSAA	2355-31-9	ND	0.756	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:28	1	
EtFOSAA	2991-50-6	ND	0.756	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:28	1	
PFUnA	2058-94-8	ND	0.756	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:28	1	
PFDoA	307-55-1	ND	0.756	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:28	1	
PFTrDA	72629-94-8	ND	0.756	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:28	1	
11Cl-PF3OUdS	763051-92-9	ND	1.01	2.02	2.27		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:28	1	
PFTeDA	376-06-7	ND	0.756	1.51	2.02		B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:28	1	
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C2-PFHxA	SURR	117	70 - 130			B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:28	1		
13C2-PFDA	SURR	101	70 - 130			B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:28	1		
d5-EtFOSAA	SURR	91.3	70 - 130			B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:28	1		
13C3-HFPO-DA	SURR	120	70 - 130			B0H0035	11-Aug-20	0.248 L	12-Aug-20 17:28	1		

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

Results reported to the DL.

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

mw 8/25/20

**DATA VALIDATION SUMMARY REPORT
NAS WHIDBEY ISLAND, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon
 SDG: 2001901
 Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
 Site: NAS Whidbey Island, Residential Wells, CTO-4470, Washington
 Date: October 1, 2020

PFAS			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-A06-RW20-0920	2001901-01	Water
2	WI-A06-RW20P-0920	2001901-02	Water
3	WI-A06-FB20-0920	2001901-03	Water

A full data validation was performed on the analytical data for two water samples and one aqueous field blank sample collected on September 3, 2020 by CH2M Hill at the NAS Whidbey Island site in Washington. The samples were analyzed under the EPA Method “Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)”.

Specific method references are as follows:

Analysis
PFAS

Method References
USEPA Method 537.1

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, DoD Final General Data Validation Guidelines, November 2019, and the USEPA Data Review and Validation Guidelines as follows:

- The USEPA “Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537,” November 2018;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination

- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Stage 2B/4) data validation was performed with this review including a recalculation of 100% of the detected results in the samples.

Data Usability Assessment

There were no serious deficiencies of data.

The data are acceptable for the intended purposes. There were no qualifications.

Perfluorinated Alkyl Substances (PFAS)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC sample results are summarized in the table below.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WI-A06-FB20-0920	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- MS/MSD samples were not analyzed.

Laboratory Control Samples (LCS)

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- All criteria were met.

Field Duplicate Sample Precision

- Field duplicate samples are summarized below. The precision was acceptable.

Compound	WI-A06-RW20-0920 ng/L	WI-A06-RW20P-0920 ng/L	RPD	Qualifier
PFBS	20.6	19.8	4%	None
PFHxA	23.4	22.8	3%	
PFHpA	4.33	4.11	5%	
PFHxS	141	137	3%	
PFOA	48.3	47.0	3%	
PFOS	30.9	29.9	3%	

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed: *Nancy Weaver*
Nancy Weaver
Senior Chemist

Dated: 10/1/20

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

Sample ID: WI-A06-RW20-0920

EPA Method 537.1

Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	2001901-01	Column:	BEH C18		
Project:	NASWI Off-Base Drinking Water Sampling	Date Collected:	03-Sep-20 14:10		Date Received:	05-Sep-20 10:00				
Location:	Water Spigot									

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	20.6	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:08	1
PFHxA	307-24-4	23.4	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:08	1
HFPO-DA	13252-13-6	ND	1.02	2.03	2.29		B010056	09-Sep-20	0.246 L	10-Sep-20 17:08	1
PFHpA	375-85-9	4.33	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:08	1
ADONA	919005-14-4	ND	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:08	1
PFHxS	355-46-4	141	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:08	1
PFOA	335-67-1	48.3	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:08	1
PFNA	375-95-1	ND	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:08	1
PFOS	1763-23-1	30.9	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:08	1
9CI-PF3ONS	756426-58-1	ND	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:08	1
PFDA	335-76-2	ND	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:08	1
MeFOSAA	2355-31-9	ND	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:08	1
EtFOSAA	2991-50-6	ND	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:08	1
PFUnA	2058-94-8	ND	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:08	1
PFDoA	307-55-1	ND	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:08	1
PFTTrDA	72629-94-8	ND	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:08	1
11CI-PF3OUdS	763051-92-9	ND	1.02	2.03	2.29		B010056	09-Sep-20	0.246 L	10-Sep-20 17:08	1
PFTeDA	376-06-7	ND	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:08	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	101	70 - 130			B010056	09-Sep-20	0.246 L	10-Sep-20 17:08	1	
13C2-PFDA	SURR	93.9	70 - 130			B010056	09-Sep-20	0.246 L	10-Sep-20 17:08	1	
d5-EtFOSAA	SURR	84.6	70 - 130			B010056	09-Sep-20	0.246 L	10-Sep-20 17:08	1	
13C3-HFPO-DA	SURR	89.7	70 - 130			B010056	09-Sep-20	0.246 L	10-Sep-20 17:08	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

WI 10/1/20

Sample ID: WI-A06-RW20P-0920						EPA Method 537.1					
Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	2001901-02	Column:	BEH C18			
Project:	NASWI Off-Base Drinking Water Sampling	Date Collected:	03-Sep-20 14:15		Date Received:	05-Sep-20 10:00					
Location:	Water Spigot										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	19.8	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:19	1
PFHxA	307-24-4	22.8	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:19	1
HFPO-DA	13252-13-6	ND	1.02	2.03	2.29		B010056	09-Sep-20	0.246 L	10-Sep-20 17:19	1
PFHpA	375-85-9	4.11	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:19	1
ADONA	919005-14-4	ND	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:19	1
PFHxS	355-46-4	137	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:19	1
PFOA	335-67-1	47.0	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:19	1
PFNA	375-95-1	ND	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:19	1
PFOS	1763-23-1	29.9	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:19	1
9Cl-PF3ONS	756426-58-1	ND	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:19	1
PFDA	335-76-2	ND	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:19	1
MeFOSAA	2355-31-9	ND	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:19	1
EtFOSAA	2991-50-6	ND	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:19	1
PFUnA	2058-94-8	ND	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:19	1
PFDoA	307-55-1	ND	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:19	1
PFTTrDA	72629-94-8	ND	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:19	1
11Cl-PF3OUdS	763051-92-9	ND	1.02	2.03	2.29		B010056	09-Sep-20	0.246 L	10-Sep-20 17:19	1
PFTeDA	376-06-7	ND	0.762	1.52	2.03		B010056	09-Sep-20	0.246 L	10-Sep-20 17:19	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	98.6	70 - 130			B010056	09-Sep-20	0.246 L	10-Sep-20 17:19	1	
13C2-PFDA	SURR	91.4	70 - 130			B010056	09-Sep-20	0.246 L	10-Sep-20 17:19	1	
d5-EtFOSAA	SURR	87.9	70 - 130			B010056	09-Sep-20	0.246 L	10-Sep-20 17:19	1	
13C3-HFPO-DA	SURR	89.4	70 - 130			B010056	09-Sep-20	0.246 L	10-Sep-20 17:19	1	

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

nw 101120

Sample ID: WI-A06-FB20-0920

EPA Method 537.1

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	2001901-03	Column:	BEH C18
Project:	NASWI Off-Base Drinking Water Sampling	Date Collected:	03-Sep-20 14:10	Date Received:	05-Sep-20 10:00		
Location:	Field Reagent Blank						

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.730	1.46	1.95		B0I0056	09-Sep-20	0.257 L	10-Sep-20 17:30	1
PFHxA	307-24-4	ND	0.730	1.46	1.95		B0I0056	09-Sep-20	0.257 L	10-Sep-20 17:30	1
HFPO-DA	13252-13-6	ND	0.973	1.95	2.19		B0I0056	09-Sep-20	0.257 L	10-Sep-20 17:30	1
PFHpA	375-85-9	ND	0.730	1.46	1.95		B0I0056	09-Sep-20	0.257 L	10-Sep-20 17:30	1
ADONA	919005-14-4	ND	0.730	1.46	1.95		B0I0056	09-Sep-20	0.257 L	10-Sep-20 17:30	1
PFHxS	355-46-4	ND	0.730	1.46	1.95		B0I0056	09-Sep-20	0.257 L	10-Sep-20 17:30	1
PFOA	335-67-1	ND	0.730	1.46	1.95		B0I0056	09-Sep-20	0.257 L	10-Sep-20 17:30	1
PFNA	375-95-1	ND	0.730	1.46	1.95		B0I0056	09-Sep-20	0.257 L	10-Sep-20 17:30	1
PFOS	1763-23-1	ND	0.730	1.46	1.95		B0I0056	09-Sep-20	0.257 L	10-Sep-20 17:30	1
9CI-PF3ONS	756426-58-1	ND	0.730	1.46	1.95		B0I0056	09-Sep-20	0.257 L	10-Sep-20 17:30	1
PFDA	335-76-2	ND	0.730	1.46	1.95		B0I0056	09-Sep-20	0.257 L	10-Sep-20 17:30	1
MeFOSAA	2355-31-9	ND	0.730	1.46	1.95		B0I0056	09-Sep-20	0.257 L	10-Sep-20 17:30	1
EtFOSAA	2991-50-6	ND	0.730	1.46	1.95		B0I0056	09-Sep-20	0.257 L	10-Sep-20 17:30	1
PFUnA	2058-94-8	ND	0.730	1.46	1.95		B0I0056	09-Sep-20	0.257 L	10-Sep-20 17:30	1
PFDoA	307-55-1	ND	0.730	1.46	1.95		B0I0056	09-Sep-20	0.257 L	10-Sep-20 17:30	1
PFTrDA	72629-94-8	ND	0.730	1.46	1.95		B0I0056	09-Sep-20	0.257 L	10-Sep-20 17:30	1
11CI-PF3OUdS	763051-92-9	ND	0.973	1.95	2.19		B0I0056	09-Sep-20	0.257 L	10-Sep-20 17:30	1
PFTeDA	376-06-7	ND	0.730	1.46	1.95		B0I0056	09-Sep-20	0.257 L	10-Sep-20 17:30	1
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101		70 - 130			B0I0056	09-Sep-20	0.257 L	10-Sep-20 17:30	1
13C2-PFDA	SURR	93.7		70 - 130			B0I0056	09-Sep-20	0.257 L	10-Sep-20 17:30	1
d5-EtFOSAA	SURR	92.5		70 - 130			B0I0056	09-Sep-20	0.257 L	10-Sep-20 17:30	1
13C3-HFPO-DA	SURR	91.7		70 - 130			B0I0056	09-Sep-20	0.257 L	10-Sep-20 17:30	1

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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

NW 10/1/20