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SITE ASSESSMENT REPORT

**Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County, Florida
ERIC_7408
FDEP Contract HW 550, Task Assignment SOL-0A067**

Prepared for

Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Prepared by

Geosyntec Consultants, Inc.
19321 U.S. Highway 19 North
Building C, Suite 200
Clearwater, FL 33764

Project FR3630B

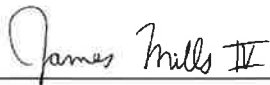
15 May 2020

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1. INTRODUCTION

1.1 Overview

Geosyntec Consultants, Inc. (Geosyntec) has prepared this Site Assessment Report for the Palm Beach State College (PBSC; “the Site”) located at 4200 South Congress Avenue in Lake Worth, Florida on behalf of the Florida Department of Environmental Protection (FDEP). This work was conducted in accordance with Task Assignments HW550-SL-0A032 and HW550-SOL-0A067.

1.2 Objectives

The objectives of this investigation were to evaluate the extent of per- and polyfluoroalkyl substances (PFAS) in Site media including soil and groundwater and the presence or absence of PFAS in sediment and surface water.

1.3 PFAS Overview

The Interstate Technology and Regulatory Council (ITRC) has developed a series of fact sheets to summarize the latest science and emerging technologies for PFAS. According to the ITRC fact sheets, PFAS consist of more than 4,700 manmade fluorinated organic chemical compounds that have been extensively manufactured since the mid-20th century (ITRC, 2020). Perfluorooctane sulfonate (PFOS) and perfluorooctanoate (PFOA) are two perfluoroalkyl substances that are fully fluorinated carbon-chain molecules (USEPA, 2017). Polyfluoroalkyl substances are not fully fluorinated and have a non-fluorine atom attached to at least one of the carbon atoms (ATSDR, 2017). PFAS are widely used due to their unique physical and chemical properties (e.g., surfactant, oil-repelling, water-repelling, etc.) (ITRC, 2020; USEPA, 2017). One widely recognized use of PFAS is as a component in aqueous film forming foam (AFFF) (USEPA, 2017). AFFF has been stored and used by the military, airports, and other firefighting and fire-training facilities to extinguish hydrocarbon fires (ITRC, 2020; USEPA, 2017). PFAS are emerging environmental contaminants of concern due to evidence of their potential human health effects or environmental risks. When released to the environment, some PFAS have been shown to be stable, mobile, persistent, and bioaccumulative (ITRC 2020; USEPA 2017).

1.4 Assessment Overview

In August 2019, Geosyntec completed a Preliminary Assessment at PBSC (Task Assignment HW550-SL-0A032) that included soil, groundwater, surface water, and sediment sampling to assess the presence or absence of PFAS in Site media (Geosyntec, 2019). Results indicated that concentrations of PFOA and/or PFOS were detected above FDEP’s provisional cleanup target levels (CTLs) in soil and groundwater (see Section 1.5 regarding provisional CTLs). Based on these results, additional site assessment activities were completed between February and March 2020 (Task Assignment HW550-SOL-0A067) to evaluate the extent of PFAS in soil and groundwater. This report presents assessment activities and results from the August 2019 and February to March 2020 assessments.

Prior to both assessment investigations, Geosyntec prepared work plans that described the proposed sampling activities for FDEP review. The Preliminary Assessment and Site Assessment Work Plans included figures showing the proposed sampling locations and tables summarizing the sampling locations, matrices, depth intervals, sampling methods, laboratory analyses, rationale, and screening criteria.

1.5 Laboratory Analysis and Data Screening Process

On-Site samples collected from environmental media (groundwater, sediment, soil, and surface water) and firefighting foam product were packed on wet ice and transported under chain-of-custody to the FDEP Laboratory. The laboratory analyzed the samples for PFAS constituents using United States Environmental Protection Agency (USEPA) Method 8321B.

CTLs for PFAS constituents have not been promulgated under Chapter 62-777, Florida Administrative Code (FAC). Following the procedures promulgated in Chapter 62-777 FAC, Chapter 62-780 FAC, and at the request of FDEP, the University of Florida (UF) calculated provisional soil cleanup target levels (SCTLs) for residential-direct exposure (R-), commercial/industrial-direct exposure (I-), and provisional groundwater leachability (L-) SCTLs for PFOA and PFOS. Following the promulgated procedures, UF also calculated provisional groundwater cleanup target levels (GCTLs) for PFOA and PFOS. The formulas, assumptions, and chemical-specific parameters used in the calculations are presented in letters prepared by UF included in **Appendix A**. The following table summarizes the provisional cleanup target levels.

Provisional Cleanup Target Level	PFOS	PFOA	PFOS + PFOA	Units*
R-SCTL	1,300	1,300	Not applicable	µg/Kg
I-SCTL	25,000	25,000	Not applicable	µg/Kg
L-SCTL	7	2	Not applicable	µg/Kg
Groundwater	70	70	70	ng/L

* µg /Kg indicates micrograms per kilogram and ng/L indicates nanograms per liter.

The provisional CTLs were used as the primary screening criteria to evaluate the nature and extent of PFAS constituents in soil and groundwater. The analytical results of the media sampled at PBSC were evaluated to identify PFAS constituents present at concentrations that exceed applicable screening criteria and assess areas of the Site that may require further investigation. For general Site characterization, both soil and groundwater were screened against human health criteria. Soil data were compared to the provisional L-, R-, and I-SCTLs, and groundwater data were compared to the provisional GCTLs. Provisional CTLs for surface water are under development, and provisional CTLs for sediment have not been calculated. Therefore, the analytical results from these media were evaluated to identify potential exposure pathways and/or potential PFAS sources.

2. SITE DESCRIPTION AND HISTORY

2.1 Site Location

The Site is on the Lake Worth campus of PBSC located at 4200 South Congress Avenue in Lake Worth, Palm Beach County, Florida. The Site lies within Section 29, Township 44 South, and Range 43 East and encompasses approximately 114 acres. Within the 114-acre campus, the smaller footprint of the environmental assessment area includes a burn tower, burn building, building for fire truck and engine storage, retention pond, canal, and prop storage area. The remainder of the campus is occupied by additional buildings, parking areas, and sports fields that are associated with other PBSC academic and student-life programs unrelated to the firefighter academy program. The Site is bordered to the north, south, and west by commercial storefronts and offices. Lake Osborne and the John Prince Park (owned by Palm Beach County) border the eastern boundary of the Site. The United States Geological Survey topographic map showing the Site location is provided as **Figure 1**. The Site Vicinity Map is presented in **Figure 2**.

2.2 Site Utilities

Multiple underground utility types including potable water, wastewater, and stormwater pipes and electrical, natural gas, propane, and telecommunication lines are located within the area of environmental assessment activities at the Site. The Site is served by a municipal water-supply system for facility drinking water. As-built figures depicting the master utility locations within the area of assessment activities are provided in **Appendix B**.

2.3 Topography and Drainage

The topography of the Site is generally flat with an elevation of approximately 10 feet (ft) above mean sea level (**Figure 1**). Stormwater retention areas form surface depressions at five areas on-Site.

The Site Vicinity Map (**Figure 2**) depicts five stormwater retention areas within the property boundaries that serve to collect and store stormwater year-round across the Site. The stormwater retention areas appear to be designed to collect stormwater runoff from the parking areas and other impervious surfaces that occupy a significant portion of the land area on-Site. Storm drains are located across the Site and appear to convey stormwater runoff to the retention areas (see Sheet D-4 of **Appendix B**). Additionally, a canal (E-4 Canal) borders the southern and eastern property boundary that presumably conveys stormwater runoff from the Site (and nearby properties or roadways) to the northernmost extent of Lake Osborne (directly east of the Site). Lake Osborne extends south of the Site and is approximately 378 acres in size with an average depth of 6.8 ft and a maximum depth of 27 ft (Palm Beach County, 2020).

2.4 Potable Water Wells

A potable well desktop survey was conducted, within a 1-mile radius of the Site, through the Florida Department of Health (FDOH) website (FDOH, 2020). A total of nine potable wells (two labelled as “inactive”) were identified within a 0.5-mile radius and 24 potable wells (two labelled

as “inactive”) were identified between a 0.5- and 1-mile radius from the Site. **Figure 3** depicts the potable wells identified within a 1-mile radius of the Site. **Table 1** includes detailed information of the potable wells collected from the FDOH website.

2.5 Operational Description

According to the PBSC website, the facility offers training for students seeking state certification as firefighters as well as current firefighters seeking to advance fire service areas including tactics and strategies, fire prevention, fire investigation, company officer, and fire apparatuses and equipment (PBSC, 2020a). An on-Site fire training tower and burn building are used to create training simulations (PBSC, 2020b). According to the Fire Training Facility Questionnaire administered by the FDEP in 2019 and completed by PBSC representatives, the facility has used AFFF since 2006 on both pervious and impervious surfaces.

2.6 Previous Investigations

According to the FDEP Information Portal website, no known environmental investigations for PFAS or other constituents of concern have been previously conducted or reported to the FDEP for the Site (FDEP, 2020). Assessment activities conducted by Geosyntec in August 2019 and February to March 2020 mark the initial environmental investigations at the Site.

3. GEOLOGY AND HYDROGEOLOGY

3.1 Regional Geology

Geologic formations underlying the region include, in descending order (Harvey et al., 2002):

- The Pamlico Sand, consisting of a fine quartz sand and carbonate grains that lies unconformably upon the Miami, Fort Thompson, and Anastasia formations;
- The Anastasia Formation that is a grainstone and composed of cemented shell fragments, commonly referred to as coquina;
- The Caloosahatchee Marl that is composed of sandy marl, clay, and silt and is interbedded with shell beds; and
- The Hawthorn Group that consists of phosphatic siliciclastic sediments of fine- to coarse-grained quartz sand, quartz silt, and clay minerals consisting of impermeable and semi-permeable marls.

Palm Beach County is primarily underlain by the Anastasia Formation that is comprised of interbedded sands and coquina-rich limestones. Sediments can vary from unconsolidated, unfossiliferous to very fossiliferous sand to moderately indurated, coquina (Scott, 2001). The Site lies at the northern extremity of the Atlantic Coastal Ridge subdivision of the Southern Geomorphologic Zone of Florida. Soils on the coastal ridge are deep and excessively drained and typically consist of shelly sands, which formed in thick beds of sandy marine sediments (White, 1970).

3.2 Regional Hydrogeology

Two aquifers are present in Palm Beach County: the unconfined, surficial aquifer and the artesian Floridan Aquifer. The surficial aquifer is unconfined with a thickness of approximately 250 ft and is comprised of permeable sands, limestone, and shell beds of the Pamlico Sand, Anastasia Formation, and the Caloosahatchee Marl (Miller, 1988). The surficial aquifer is separated from the underlying Floridan Aquifer by the confining beds of the Tamiami and Hawthorn Formations that consist of several hundred feet of relatively impermeable clays, silts, and marls (Lane, 1980). In the vicinity of the Site, the Floridan Aquifer is separated from the surficial aquifer by a confining unit and is not considered a potable water source in this area due to brackish conditions.

3.3 Site-Specific Geology

Geosyntec documented lithology from each soil boring and monitoring well locations (see Sections 4.2 and 4.3 and **Appendix C**). In addition to hand auger soil borings advanced for shallow soil sampling, deeper soil borings were advanced using the rotonic technique for lithologic observations during monitoring well installation. The deepest soil boring was collected to a depth of 143 feet below land surface (ft BLS) at DEPMW-10.

Lithology from shallow hand auger soil sample locations generally consisted of light- to dark-brown, very fine-grained sand with minor amounts of silt, clay nodules, and roots (near land

surface). Lithology at DEPMW-10 was similar to the shallow borings and consisted mostly of sand with varying degrees of silt content. Cross sections representing the generalized lithology at the Site are presented on **Figure 4** and **Figure 5**.

Additionally, Geosyntec documented lithology from each sediment boring location (See Section 4.5 and **Appendix C**). Lithology collected from the sediment samples varied by location. The stormwater retention pond samples (Sed-1 and Sed-7) consisted of saturated, tan- to dark-brown, very fine-grained sand. The canal sample (Sed-2) consisted of saturated, medium-brown, very fine-grained sand with gravel up to 1-inch in diameter. The storm drain samples (Sed-3 through Sed-6) consisted of medium- to coarse-grained sand.

3.4 Site-Specific Hydrogeology

Geosyntec collected depth-to-groundwater measurements in newly installed monitoring wells across the Site (see Section 4.3 and **Appendix C**) in March 2020 prior to groundwater sampling. Based on the measurements, a contour figure was generated for monitoring wells installed from 3 to 13 ft BLS; contour figures were not generated for wells installed from 45 to 65 or 85 to 107 ft BLS due to insufficient monitoring wells installed in these intervals. Groundwater in the wells installed from 3 to 13 ft BLS appears to be influenced by surface water bodies adjacent to the Site. **Figure 6** depicts groundwater elevations from 3 to 13 ft BLS, **Figure 7** depicts groundwater elevations from 45 to 65 ft BLS, and **Figure 8** depicts groundwater elevations from 85 to 107 ft BLS.

Based on groundwater elevation data, there are downward vertical hydraulic gradients between wells installed from 3 to 13 ft BLS and 45 to 65 ft BLS in each well pair [e.g., DEPMW-3 (3-13') and DEPMW-11 (45-65')] and between wells installed from 45 to 65 ft BLS and 85 to 107 ft BLS in each well pair [e.g., DEPMW-11 (45-65') and DEPMW-10 (87-107')].

4. SITE CHARACTERIZATION

Field activities were performed in general accordance with FDEP Standard Operating Procedures (SOPs) for Field Activities and internal SOPs for PFAS sampling that were developed by Geosyntec. The sampling locations (including quality assurance/quality control [QA/QC] samples), matrices, depth intervals, sampling methods, laboratory analyses, rationale, and screening criteria used during the assessment activities are summarized on **Table 2**, which reflects any deviations from Preliminary Assessment and Site Assessment Work Plans (and which are further discussed in the sections below). Sample locations are provided on **Figure 9**. Field forms are provided in **Appendix C**, and laboratory analytical reports are provided in **Appendix D**.

Geosyntec prepared a Site-specific Health and Safety Plan (HASP) in July 2019 (updated in January 2020) to address project-specific hazards that were known or suspected to be present due to existing conditions and work to be performed at the Site. The HASP met the requirements specified in the Occupational Safety and Health Administration Hazardous Waste Operations and Emergency Response program and Geosyntec's internal health and safety standards. Geosyntec maintained the HASP on-Site during assessment activities.

4.1 Utility Locate

Geosyntec observed GeoTek Services, LLC (GeoTek) perform an underground utility survey prior to soil sampling and drilling activities on 14 August 2019 and 4 February 2020. During both surveys, GeoTek utilized electromagnetic induction and ground penetrating radar to identify any potential subsurface utilities or obstructions. The suspected underground utilities were marked on land surface and sampling or monitoring well locations were repositioned as necessary to avoid potential subsurface conflicts.

4.2 Soil Assessment

Geosyntec conducted hand-auger soil sampling at a total of 26 boring locations (4 locations included 2 co-located borings at different intervals) during the 2019 and 2020 assessment activities. Soil sample locations are presented on **Figure 9**. Lithology collected from each soil boring location is presented in **Appendix C** (see general descriptions in Section 3.3).

4.2.1 Soil Sampling Activities

Geosyntec collected a total of 95 discrete soil samples for laboratory analysis in August 2019 and February 2020. Soil samples were collected using decontaminated stainless-steel hand augers. Soil sample intervals and identifications are included in **Table 3**.

In August 2019, Geosyntec collected discrete soil samples for laboratory analysis from the 0 to 1 and 1 to 2 ft BLS depth intervals¹ at 7 locations (SS-1 through SS-7; 14 total soil samples) and documented the corresponding lithology (**Appendix C**). In February 2020, Geosyntec completed 4 soil borings (SB-1, SB-2, SB-6, and SB-7) and collected discrete samples from 2 ft BLS to the water table at select August 2019 boring locations (SS-1, SS-2, SS-6, and SS-7) and from land surface to the encountered water table at 19 additional boring locations (SB-3 to SB-5 and SB-8 to SB-23). The Site Assessment Work Plan proposed the deepest soil sample intervals to be collected from 4 to 6 ft BLS based on previous depth-to-groundwater measurements and anticipated Site conditions; however, the water table at the Site was observed to be approximately 5 ft BLS or shallower during the February 2020 sampling event. Soil sample depth intervals were adjusted accordingly from water table observations in the field. Completed soil borings were backfilled with the unused soil cuttings corresponding to the specific soil boring location and interval from which the soil was removed.

QA/QC samples collected in August 2019 consisted of two equipment blanks (EQB-2 and EQB-3) that were collected from decontaminated hand auger buckets. The QA/QC sample collected in February 2020 consisted of one equipment blank (EQB-4) that was collected from a decontaminated hand auger bucket.

4.2.2 Soil Results

Analytical laboratory soil sample results are summarized on **Table 3** and depicted on **Figure 10**. PFOS results are presented by individual depth interval on **Figure 11** through **Figure 14**. PFOA results presented by individual depth interval on **Figure 15** through **Figure 18**. Results indicated the following:

- Concentrations of PFOA were above the provisional L-SCTL of 2 µg/Kg at 2 locations (SB-1 / SS-1 and SB-2 / SS-2) within the AFFF usage area; and
- Concentrations of PFOS were above the provisional L-SCTL of 7 µg/Kg at 3 locations (SS-1, SS-2, and SS-3) within the AFFF usage area, 5 locations (SB-5, SS-7, SB-8, SB-14, and SB-18) near the burn building, and 1 location (SB-19) near the former burn props staging area.

4.3 Groundwater Assessment

Geosyntec installed and sampled two temporary groundwater monitoring wells in August 2019. Based on groundwater results from the 2019 Preliminary Assessment, Geosyntec installed and sampled 13 permanent groundwater monitoring wells between February and March 2020. Monitoring well construction details from both events are summarized in **Table 4**.

¹ At the time of the August 2019 assessment activities, samples were collected from 0 to 1 and 1 to 2 ft BLS depth intervals to evaluate the presence or absence of PFAS constituents. Depth intervals used for soil sampling during subsequent assessment activities were revised to 0 to 0.5 and 0.5 to 2 ft BLS in accordance with Chapter 62-780 FAC.

4.3.1 Temporary Monitoring Well Installation and Sampling

Geosyntec subcontracted Preferred Drilling Solutions, Inc. (PDS) to install two temporary monitoring wells in August 2019. Temporary well TMW-1 was installed in the AFFF usage area identified by PBSC representatives during a Site walk. Temporary well TMW-2 was installed in a grassy, low-lying area to the north of the burn tower and southeast of the burn building near a storm drain location. Temporary well locations are presented on **Figure 9**.

PDS installed the temporary wells to a depth of approximately 14 ft BLS using direct-push technology (DPT). PDS utilized a post-hole digger and/or a hand auger to confirm the absence of subsurface utilities to a depth of up to 5 ft BLS or refusal prior to installing the temporary wells. The wells were constructed with 10 ft of 1-inch diameter polyvinyl chloride (PVC) pre-packed well screen slotted at 0.010 inches and approximately 4 ft of 1-inch diameter PVC riser. The well screens were installed across the water table and the formation was allowed to collapse around each well. The remaining annular borehole space was filled with 20/30 silica sand to at least six inches above the top of the well screen. Geosyntec developed the temporary monitoring wells using a centrifugal pump until the purge water was relatively free of sediment. Construction details for the temporary monitoring wells are provided in **Table 4**. Well construction and development field forms are presented in **Appendix C**.

Immediately following the temporary monitoring well development, Geosyntec utilized a peristaltic pump to collect groundwater samples from TMW-1 and TMW-2 and one duplicate sample (DUP-2) from TMW-1 after stabilization of geochemical field parameters in accordance with FDEP SOPs. Purge water generated during well development and sampling activities was containerized and transported off-Site for disposal (see Section 4.8). PDS removed the temporary monitoring wells after sampling and grouted the boreholes to land surface. Groundwater sampling logs are presented in **Appendix C**.

4.3.2 Permanent Monitoring Well Installation and Surveying

Geosyntec subcontracted PDS to install 13 permanent monitoring wells in February 2020. Monitoring well locations are presented on **Figure 9**.

PDS installed 8 monitoring wells to a depth of approximately 13 ft BLS using the hollow stem auger (HSA) technique and 5 monitoring wells at varying depths from 65 to 107 ft BLS using the rotosonic technique. PDS utilized a post-hole digger and/or a hand auger to confirm the absence of subsurface utilities to a depth of up to 5 ft BLS or refusal prior to installing the monitoring wells. Continuous soil core samples were collected for lithologic description prior to monitoring well installation using the DPT technique for wells installed to 13 ft BLS and rotosonic technique for 65 to 107 ft BLS. Based on lithologic descriptions, the 13 monitoring wells are considered to be installed at varying depths within the surficial aquifer. Field boring logs containing lithologic descriptions are included in **Appendix C**.

Monitoring wells installed to 13 ft BLS were constructed with 10 ft of 2-inch diameter PVC well screen slotted at 0.010 inches and approximately 3 ft of 2-inch diameter PVC riser. Monitoring wells installed to 65 and 107 ft BLS were constructed of 20 ft of 2-inch diameter PVC well screen

slotted at 0.010 inches and varying lengths of 2-inch diameter PVC riser to land surface. Filter packs consisting of 20/30 silica sand were added from the well terminus to at least 1.5 ft above the top of the well screens. Fine sand seals (30/65 sand) were added to the monitoring wells installed to 13 ft BLS to at least 0.5 ft above the top of the filter packs. Bentonite seals were added to the monitoring wells installed to 65 and 107 ft BLS to at least 3 ft above the top of the filter packs. The remaining annular space in each borehole above the fine sand or bentonite seals was completed using Portland Type I/II grout to land surface. The monitoring wells were completed as flush mounts with 8-inch bolt-down manhole covers in 2 ft by 2 ft concrete well pads. Geosyntec developed the monitoring wells installed to 13 ft BLS (except DEPMW-1) using a peristaltic pump and wells installed to 65 and 107 ft BLS and DEPMW-1 using a submersible pump until the water was relatively free of sediment. Purge water generated during well development activities was containerized and transported off-Site for disposal (see Section 4.8). Monitoring well construction details are provided in **Table 4**. Well construction and development field forms are presented in **Appendix C**.

On 4 March 2020, Kugelmann Land Surveying, Inc., a Florida-licensed surveyor, conducted a survey of the top-of-casing (TOC) elevations (North American Vertical Datum of 1988) and horizontal coordinates (Florida State Plane Coordinate System, East Zone, North American Datum of 1983) at the 13 permanent monitoring well locations. Monitoring well TOC elevations are included in **Table 4**. **Figure 9** depicts the spatial locations of the monitoring wells using the surveyed horizontal coordinates.

4.3.3 Depth-to-Groundwater and Groundwater Sampling Activities

Geosyntec measured depth-to-groundwater in 13 monitoring wells on 4 March 2020 prior to groundwater sampling. Groundwater levels were measured to the nearest 0.01 ft using an electronic water-level indicator.

Groundwater samples were collected via peristaltic pump after stabilization of water quality parameters including temperature, conductivity, pH, turbidity, and dissolved oxygen. Two duplicate samples were collected at DEPMW-7 (DEPMW-7 (3-13') DUP) and DEPMW-13 (DEPMW-13 (45-65') DUP). Groundwater sampling logs and calibration forms are included with the field notes in **Appendix C**. The laboratory analytical report is provided in **Appendix D**. Purge water generated during well sampling activities was containerized and transported off-Site for disposal (see Section 4.8).

4.3.4 Groundwater Elevation and Sampling Results

Depth-to-groundwater measurements and the surveyed TOC elevations were used to calculate groundwater elevations presented in **Table 5**. The groundwater elevation data were plotted, and groundwater elevation maps are provided on **Figure 6** (showing groundwater from 3 to 13 ft BLS), **Figure 7** (showing groundwater from 45 to 65 ft BLS) and **Figure 8** (showing groundwater from 85 to 107 ft BLS). Based on the measurements, a contour figure was generated for monitoring wells installed from 3 to 13 ft BLS; contour figures were not generated for wells installed from 45 to 65 or 85 to 107 ft BLS due to insufficient monitoring wells installed in these intervals.

Groundwater in the wells installed from 3 to 13 ft BLS appears to be influenced by surface water bodies adjacent to the Site.

Analytical laboratory results for the temporary groundwater monitoring well samples collected in August 2019 are summarized in **Table 6** and depicted on **Figure 19**. Results indicated that the individual concentrations of PFOA and PFOS and the summation of the PFOA and PFOS concentrations at both TMW-1 and TMW-2 were above the provisional GCTL of 70 ng/L.

Analytical laboratory results from the permanent monitoring well samples collected in March 2020 are summarized in **Table 6** and depicted on **Figure 19** (showing 3 to 14 ft BLS), **Figure 20** (showing 45 to 65 ft BLS), and **Figure 21** (showing 85 to 107 ft BLS). The vertical extent of PFOS and PFOA is depicted across A-A' in **Figure 22** and B-B' in **Figure 23**. Results indicated the following:

- Concentrations of PFOS and PFOA exceeded their respective provisional GCTLs in DEPMW-1 (3-13') located within the AFFF usage area, DEPMW-2 (3-13') located north of the burn tower, DEPMW-5 (3-13') located north of the burn building, and DEPMW-3 (3-13') and DEPMW-11 (45-65') north of the former burn props staging area;
- PFOS and PFOA were detected above the laboratory MDL at all monitoring well locations installed from 3 to 13 and 45 to 65 ft BLS; and
- Only PFOA was detected above the laboratory MDL at DEPMW-9 (85-105') in the two monitoring wells installed from 85 to 107 ft BLS.

4.4 Surface Water Assessment

Geosyntec collected two surface water samples and one duplicate sample in August 2019. The sampling locations are depicted on **Figure 9**.

4.4.1 Surface Water Sampling Activities

Geosyntec collected surface water samples using the direct grab technique. One surface water sample (SW-1) and one duplicate sample (DUP-1) were collected from the southeastern portion of the stormwater retention pond located north of the AFFF usage area. The second surface water sample (SW-2) was collected from the E-4 Canal along the eastern boundary of the Site that drains into Lake Osborne. SW-2 was located to the southeast of the former burn props staging area; this area is located to the north of the current retention pond. PBSC representatives stated that no training activities were conducted within the staging area to the north of the retention pond.

4.4.2 Surface Water Results

Analytical laboratory results for the surface water samples are summarized in **Table 7** and depicted on **Figure 24**. Since provisional CTLs have not been developed for surface water, individual concentrations of PFOA and PFOS and/or the summation of the PFOA and PFOS concentrations were compared with the provisional GCTL of 70 ng/L to evaluate potential exposure pathways and/or potential sources that could contribute PFAS constituents to groundwater. Results indicated that the concentrations of PFOA and PFOS and the summation of the PFOA and PFOS

concentrations were less than 70 ng/L. Results indicated that the maximum concentration of PFOA and PFOS in the retention pond on-Site was approximately 25 ng/L and the concentration in the E-4 Canal was approximately 54 ng/L.

4.5 Sediment Assessment

Geosyntec collected seven sediment samples in August 2019. The sampling locations are depicted on **Figure 9**. Lithology collected from each location is presented in **Appendix C** (see general descriptions in Section 3.3)

4.5.1 Sediment Sampling Activities

Geosyntec collected sediment samples using stainless steel hand augers. Two sediment samples (Sed-1 and Sed-7) were collected from the southern portion of the stormwater retention pond located north of the AFFF usage area; Sed-1 was co-located with SW-1. One sediment sample (Sed-2) was collected in the canal along the eastern boundary of the Site, co-located with SW-2. Four sediment samples (Sed-3 through Sed-6) were collected from storm drains set within impervious areas at the central portion of the fire training facility area, where vehicles are generally staged and operated for training purposes. Sed-4 and Sed-5 were located closest to the burn building and burn tower, respectively, and Sed-3 and Sed-4 were closest to the AFFF usage area. QA/QC samples consisted of one field reagent blank (FRB-1) that was collected near Sed-3 following sampling activities. After sample completion, unused sediment was returned to the borehole from which it was removed.

4.5.2 Sediment Results

Analytical laboratory sediment results and sample locations are presented on **Figure 24** and results are tabulated in **Table 8**. Since provisional CTLs have not been developed for sediment, individual concentrations of PFOA and PFOS were compared with the provisional L-SCTLs of 2 µg/Kg and 7 µg/Kg, respectively, to evaluate potential sources that could contribute PFAS constituents to Site media (e.g., groundwater and/or surface water). Sediments that remain perpetually submerged do not represent a direct exposure pathway for human health. The results indicated that the concentration of PFOA in sediment samples collected were less than 2 µg/Kg. The concentrations of PFOS was greater than 7 µg/Kg in samples Sed-3 and Sed-6.

4.6 Firefighting Foam Sampling

Six 55-gallon drums were observed during August 2019 Preliminary Assessment activities at a location south of the AFFF usage area and adjacent to the building that houses the fire trucks and engines. The drums were labeled with a permanent marker on the top as “Fire-Fighting Foam” and on the side with a label stating, “Chlorohexidine Gluconate 20% Solution.” Chlorohexidine gluconate is a common antimicrobial/antiseptic substance used in the medical and dental industries; therefore, Geosyntec suspects that the 55-gallon drums were repurposed to containerize firefighting foam. A PBSC representative stated that the firefighting foam was donated to the facility for training use.

4.6.1 Firefighting Foam Sampling

In August 2019, FDEP collected a firefighting foam product sample (designated as “Chlorohexidine Gluconate”) from one of the 55-gallon drums labeled with a permanent marker on the top as “Fire-Fighting Foam” and on the side with a label as “Chlorohexidine Gluconate.”

4.6.2 Firefighting Foam Results

Analytical results are summarized in **Table 9** and indicate elevated concentrations of PFOS (870,000 µg/kg), PFOA (7,400 µg/kg), and other constituents including perfluorobutanesulfonic acid (PFBS), perfluoroheptanoic acid (PFHpA), perfluorohexanesulfonic acid (PFHxS), and perfluorohexanoic acid (PFHxA).

4.7 Decontamination Procedures

Decontamination activities were performed in accordance with Geosyntec internal SOPs for PFAS sampling either at a designated staging and laydown area or at each monitoring well location. Decontamination procedures utilized for non-disposable, reusable soil, sediment, surface water, and groundwater sampling equipment included decontaminating the sampling equipment in 5-gallon high-density polyethylene (HDPE) buckets. The sampling equipment was first submerged and scrubbed in two 5-gallon HDPE buckets filled with a solution of Liquinox detergent and PFAS-free water provided by FDEP and then submerged in two 5-gallon HDPE buckets filled with PFAS-free water. This sequence of scrubbing and rinsing was performed twice for each hand auger bucket and submersible pump and then followed by a final pour-over rinse of PFAS-free water. Equipment blanks from decontaminated hand auger buckets were collected in August 2019 (EQB-2 and EQB-3) and February 2020 (EQB-4).

The decontamination procedures followed for monitoring well installation equipment included pressure washing DPT, HSA, and roto sonic drilling equipment. Drilling equipment was decontaminated using a pressure washer and Liquinox detergent followed by a series of rinses using PFAS-free water over a constructed wooden and plastic sheeting decontamination pit that collected decontamination fluids. Decontaminated equipment was staged on clean plastic sheeting prior to use. Decontamination fluids were drummed as IDW and disposed off-Site. One equipment blank (EQB-1) was collected from the lead DPT rod prior to installing TMW-1. Equipment blanks were collected from decontaminated HSA (EQB-5) and roto sonic (EQB-6) drill rods prior to installation of permanent monitoring wells. Additionally, one aqueous sample (Drilling Water) was collected from PFAS-free water supplied by PDS.

4.8 Investigation Derived Waste

Two aqueous drums of investigation derived waste (IDW) were generated during the August 2019 assessment event from decontamination activities and temporary monitoring well development and purge water. A total of 39 drums of IDW (16 drums of solid IDW, 14 drums of liquid IDW, and 9 containing a solid / liquid mixture) were generated during the February to March 2020 assessment event from decontamination activities, soil cuttings from drilling, monitoring well development and purge water. The drums were labelled and staged on asphalt at a location approved by PBSC representatives. Field drum inventories are provided in **Appendix C**. IDW

analytical results are provided in **Appendix D**. Final IDW manifests are provided in **Appendix E**.

During the August 2019 assessment event, one composite aqueous sample (labelled IDW-1-Water) was collected from the IDW drums for waste characterization purposes. The composite sample was analyzed for volatile organic compounds (USEPA Method 8260D), semi-volatile organic compounds (USEPA Method 8270D), the 8 Resource Conservation and Recovery Act metals (USEPA Method 6020A and 7473), and PFAS (USEPA Method 8321B). IDW analytical laboratory reports were provided to Perma-Fix Environmental Services, Inc. (Perma-Fix) for profiling and manifest completion. The two drums were removed for off-Site disposal by Perma-Fix on 02 October 2019.

During the February to March 2020 assessment event, one aqueous sample (labelled Water Drum Sample) and one solid sample (labelled Soil Drum Sample) were collected from IDW drums for waste characterization purposes. The 2020 IDW samples were analyzed for similar constituents using similar analytical methods to the 2019 IDW sample except for semi-volatile organic compounds (USEPA Method 8270E). The IDW analytical laboratory report was provided to Universal Environmental Solutions, LLC (UES) for profiling and manifest completion. The 39 drums were removed for off-Site disposal by UES on 15 April 2020.

5. CONCLUSIONS

During assessment activities conducted in 2019 and 2020, Geosyntec collected samples of Site media (groundwater, surface water, sediment, soil, and firefighting foam) for laboratory analysis of PFAS constituents. The concentrations of PFOA and PFOS in groundwater and soil were screened against provisional CTLs, and the results from surface water and sediment were evaluated to identify potential exposure pathways and/or potential PFAS sources. The results indicated the following:

- Soil concentrations of PFOA and/or PFOS were above the provisional L-SCTLs at multiple depth intervals at 3 soil borings within the AFFF usage area, 2 locations along the E-4 Canal, and 4 locations north of the burn building. The results indicate that PFOA and PFOS could be leaching from soil to groundwater at concentrations above provisional GCTLs and may represent potential sources at these locations;
- Groundwater concentrations of PFOA and PFOS from two temporary monitoring wells near the center of the grass-covered AFFF usage area and the grass-covered low-lying area between the burn building and burn tower were above the provisional GCTLs;
- Groundwater concentrations of PFOA and PFOS were above provisional GCTLs in 4 monitoring wells installed from 3 to 13 ft BLS and 1 monitoring well installed from 45 to 65 ft BLS. The downward vertical gradient and lack of a true confining unit between monitoring wells installed from 3 to 13 and 45 to 65 ft BLS represents a potential vertical migration pathway for PFAS from land surface throughout the surficial aquifer;
- Surface water concentrations of PFOA and PFOS within the retention pond north of the AFFF usage area and the E-4 Canal, northeast of the Site, do not represent a potential exposure pathway based solely on the consumption of surface water; and
- Sediment concentrations of PFOS in two of the on-Site storm drains may represent a potential source of PFAS constituents that could leach from the sediment to groundwater and/or surface water that contacts sediment in these storm drains.

6. RECOMMENDATIONS

Geosyntec recommends the following:

- Collect additional soil samples to delineate the horizontal extent of PFAS adjacent to sample locations with concentrations exceeding the provisional L-SCTL;
- Collect additional sediment and co-located surface water samples to evaluate the presence or absence of PFAS in sediment and surface water bodies adjacent to sampling locations with groundwater or soil exceedances above provisional CTLs;
- Install staff gauges or employ other methods to determine the surface water elevation in the E-4 canal to evaluate the groundwater and surface water interaction;
- Collect DPT groundwater samples in strategic locations to update the current horizontal and vertical groundwater data gaps across the area of environmental assessment; and
- Install additional monitoring wells to delineate the horizontal and/or vertical extent of PFAS concentrations exceeding the provisional GCTL.

A work plan summarizing the proposed sampling activities will be submitted to the FDEP under a separate cover.

7. REFERENCES

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TABLES



TABLE 1: FDOH WATER WELLS WITHIN A 1-MILE RADIUS
Palm Beach State College

Florida Unique Well Identification	Range from Site (miles)	Total Depth (ft BLS)	Casing Length (feet)	Well Diameter (inches)	Status	Address	
AAN2216	0 to 0.5	--	--	2	Active	2887 2nd Ave N	
AAD0912		--	--	2	Active	3785 Bellevue Ave	
AAN2215		--	--	2	Inactive	3800 Bellevue Ave	
AAD0911		--	--	2	Active	3705 Bellevue Ave	
AAD0917		75	60	2	Active	3916 Bellevue Ave	
AAM2783		--	--	24	Inactive	41 Lake Osborne Dr	
AAN2292	0.5 to 1	--	--	2	Active	3885 Allison Ct	
AAM7987		--	--	2	Active	3886 Allison Ct	
AAH8936	0 to 0.5	--	--	--	Active	4567 Congress Ave	
AAM2782	0.5 to 1	--	--	24	Active	700 Lake Osborne Dr	
AAH1088		160	50	8	Inactive	Lake Osborne Dr	
AAH1086		102	53	8	Active	Lake Worth High School	
500005901		--	--	--	Active	114 College St	
AAM2781		--	--	24	Active	1500 Lake Osborne Dr	
AAH1077		139	30	10	Active	301 College St	
AAH1078		160	50	10	Active	301 College St	
AAN3489		--	--	30	Active	314 College St	
AAH1079		160	50	10	Active	526 Sunrise Ct	
AAJ0613		258	193	20	Inactive	644 Alpine Ave	
AAA5746		--	--	--	Active	3703 Brooklyn Ln	
AAA5745		--	--	--	Active	3705 Brooklyn Ln	
AAA5747		--	--	--	Active	3758 Brooklyn Ln	
AAA5744		--	--	--	Active	3646 Brooklyn Ln	
AAA5739		--	--	--	Active	3570 Brooklyn Ln	
AAG4952		--	--	--	Active	3758 Brooklyn Ln	
AAA5743		--	--	--	Active	3640 Brooklyn Ln	
AAA5741		--	--	--	Active	3631 Brooklyn Ln	
AAA5742		--	--	--	Active	3634 Brooklyn Ln	
AAA5738		--	--	--	Active	3548 Brooklyn Ln	
AAA5803		--	--	--	Active	16695 126th Ter N	
AAA5804		38	2	--	Active	16736 126th Ter N	
AAH3456		0 to 0.5	--	--	1	Active	3195 McSherry Dr
AAE7641			80	65	2	Active	3073 McSherry Dr

Notes:

1. FDOH indicates Florida Department of Health.
2. ft BLS indicates feet below land surface.
3. -- indicates information not specified through FDOH Well Surveillance Program website.
4. Active indicates the well is used on a regular basis or will be used within a reasonable period of time (2 to 3 months).
5. Inactive indicates the well has not been regularly used within the past 6 to 12 months but is maintained in such a state that it could be used.

TABLE 2: SAMPLING LOCATIONS, MATRICES, ANALYTES, RATIONALE, AND CRITERIA
Palm Beach State College

Location ID	Sample ID	Matrix	Depth (ft BLS)	Method	Analyses	Rationale	Criteria
SB-1	SB-1 (2-4')	Soil	2-4	HA	PFAS	Delineation Sampling	Provisional Soil Cleanup Target Levels
	SB-1 (4-5')		4-5				
SB-2	SB-2 (2-4')		2-4				
	SB-2 (4-5')		4-5				
SB-3	SB-3 (0-0.5')		0-0.5				
	SB-3 (0.5-2')		0.5-2				
	SB-3 (2-4')		2-4				
SB-4	SB-3 (4-5')		4-5				
	SB-4 (0-0.5')		0-0.5				
	SB-4 (0.5-2')		0.5-2				
SB-5	SB-4 (2-4')		2-4				
	SB-4 (4-5')		4-5				
	SB-5 (0-0.5')		0-0.5				
SB-6	SB-5 (0.5-2')		0.5-2				
	SB-5 (2-4')		2-4				
	SB-5 (4-5')		4-5				
SB-7	SB-6 (2-3')		2-3				
	SB-7 (2-4')		2-4				
SB-8	SB-7 (4-5')		4-5				
	SB-8 (0-0.5')		0-0.5				
	SB-8 (0.5-2')		0.5-2				
SB-9	SB-8 (2-4')		2-4				
	SB-8 (4-5')		4-5				
	SB-9 (0-0.5')		0-0.5				
SB-10	SB-9 (0.5-2')		0.5-2				
	SB-9 (2-4')		2-4				
	SB-9 (4-5')		4-5				
SB-11	SB-10 (0-0.5')		0-0.5				
	SB-10 (0.5-2')		0.5-2				
	SB-10 (2-4')		2-4				
	SB-10 (4-4.5')		4-4.5				
SB-12	SB-11 (0-0.5')		0-0.5				
	SB-11 (0.5-2')	0.5-2					
	SB-11 (2-4')	2-4					
SB-13	SB-11 (4-5')	4-5					
	SB-12 (0-0.5')	0-0.5					
	SB-12 (0.5-2')	0.5-2					
SB-14	SB-12 (2-4')	2-4					
	SB-12 (4-5')	4-5					
	SB-13 (0-0.5')	0-0.5					
SB-15	SB-13 (0.5-2')	0.5-2					
	SB-13 (2-4')	2-4					
	SB-13 (4-5')	4-5					
SB-16	SB-14 (0-0.5')	0-0.5					
	SB-14 (0.5-2')	0.5-2					
	SB-14 (2-4')	2-4					
SB-17	SB-14 (4-5')	4-5					
	SB-15 (0-0.5')	0-0.5					
	SB-15 (0.5-2')	0.5-2					
SB-18	SB-15 (2-4')	2-4					
	SB-15 (4-5')	4-5					
	SB-16 (0-0.5')	0-0.5					
SB-19	SB-16 (0.5-2')	0.5-2					
	SB-16 (2-4')	2-4					
	SB-16 (4-5')	4-5					

TABLE 2: SAMPLING LOCATIONS, MATRICES, ANALYTES, RATIONALE, AND CRITERIA
Palm Beach State College

Location ID	Sample ID	Matrix	Depth (ft BLS)	Method	Analyses	Rationale	Criteria
SB-17	SB-17 (0-0.5')	Soil	0-0.5	HA	PFAS	Delineation Sampling	Provisional Soil Cleanup Target Levels
	SB-17 (0.5-2')		0.5-2				
	SB-17 (2-4')		2-4				
	SB-17 (4-5')		4-5				
SB-18	SB-18 (0-0.5')		0-0.5				
	SB-18 (0.5-2')		0.5-2				
	SB-18 (2-4')		2-4				
	SB-18 (4-5')		4-5				
SB-19	SB-19 (0-0.5')		0-0.5				
	SB-19 (0.5-2')		0.5-2				
	SB-19 (2-3')		2-3				
SB-20	SB-20 (0-0.5')		0-0.5				
	SB-20 (0.5-2')		0.5-2				
	SB-20 (2-4')		2-4				
	SB-20 (4-4.5')		4-4.5				
SB-21	SB-21 (0-0.5')		0-0.5				
	SB-21 (0.5-2')		0.5-2				
	SB-21 (2-4')		2-4				
	SB-21 (4-5')		4-5				
SB-22	SB-22 (0-0.5')		0-0.5				
	SB-22 (0.5-2')		0.5-2				
	SB-22 (2-4')	2-4					
	SB-22 (4-5')	4-5					
SB-23	SB-23 (0-0.5')	0-0.5					
	SB-23 (0.5-2')	0.5-2					
	SB-23 (2-4')	2-4					
SS-1	SS-1 (0-1')	Soil	0-1	HA	PFAS	Historical AFFF Use Areas	Provisional Soil Cleanup Target Levels
	SS-1 (1-2')		1-2				
SS-2	SS-2 (0-1')		0-1				
	SS-2 (1-2')		1-2				
SS-3	SS-3 (0-1')		0-1				
	SS-3 (1-2')		1-2				
SS-4	SS-4 (0-1')		0-1				
	SS-4 (1-2')		1-2				
SS-5	SS-5 (0-1')		0-1				
	SS-5 (1-2')		1-2				
SS-6	SS-6 (0-1')		0-1				
	SS-6 (1-2')		1-2				
SS-7	SS-7 (0-1')		0-1				
	SS-7 (1-2')		1-2				
Sed-1	Sed-1 (0-1')	Sediment	0-1	Grab from storm drain	PFAS	Historical AFFF Use Areas	N/A
Sed-2	Sed-2 (0-1')		0-1				
Sed-3	Sed-3 (0-1')		0-1				
Sed-4	Sed-4 (0-1')		0-1				
Sed-5	Sed-5 (0-1')		0-1				
Sed-6	Sed-6 (0-1')		0-1				
Sed-7	Sed-7 (0-1')		0-1				
SW-1	SW-1	Surface Water	N/A	Grab from retention pond	PFAS	Historical AFFF Use Areas	N/A
	DUP-1			Grab from canal			
SW-2	SW-2			Grab from canal			

TABLE 2: SAMPLING LOCATIONS, MATRICES, ANALYTES, RATIONALE, AND CRITERIA
Palm Beach State College

Monitoring Wells							
Location ID	Sample ID	Matrix	Screen Interval (ft BLS)	Drilling Method	Analyses	Rationale	Criteria
DEPMW-1 (3-13')	DEPMW-1 (3-13')	Groundwater	3-13	HSA	PFAS	Delineation Sampling	Provisional Groundwater Cleanup Target Levels
DEPMW-2 (3-13')	DEPMW-2 (3-13')						
DEPMW-3 (3-13')	DEPMW-3 (3-13')						
DEPMW-4 (3-13')	DEPMW-4 (3-13')						
DEPMW-5 (3-13')	DEPMW-5 (3-13')						
DEPMW-6 (3-13')	DEPMW-6 (3-13')						
DEPMW-7 (3-13')	DEPMW-7 (3-13')						
	DEPMW-7 (3-13') DUP						
DEPMW-8 (3-13')	DEPMW-8 (3-13')						
DEPMW-9 (85-105')	DEPMW-9 (85-105')		85-105	Sonic			
DEPMW-10 (87-107')	DEPMW-10 (87-107')		87-107				
DEPMW-11 (45-65')	DEPMW-11 (45-65')		45-65				
DEPMW-12 (45-65')	DEPMW-12 (45-65')						
DEPMW-13 (45-65')	DEPMW-13 (45-65')						
	DEPMW-13 (45-65') DUP						
Temporary Monitoring Wells							
TMW-1	TMW-1 (4-14')	Groundwater	4-14	DPT	PFAS	Historical AFFF Use Areas	Provisional Groundwater Cleanup Target Levels
			DUP-2				
TMW-2	TMW-2 (4-14')		4-14				
Firefighting Foam Product							
Product	Chlorohexidine Gluconate ²⁰	Firefighting Foam	N/A		PFAS	Firefighting Foam currently stored at Facility	N/A

TABLE 2: SAMPLING LOCATIONS, MATRICES, ANALYTES, RATIONALE, AND CRITERIA
Palm Beach State College

Laboratory QA/QC Samples							
Drum Number	Sample ID	Matrix	Equipment Sampled	Analysis	Rationale	Criteria	
Field Reagent Blanks	FRB-1	Water	N/A	PFAS	Evaluate potential impact of sample cross-contamination	N/A	
	FRB-2						
	FRB 3-4-20						
Equipment Blanks	EQB-1		DPT core barrel		Assess potential sources of contamination from monitoring well installation equipment		
	EQB-2		HA bucket				Assess potential sources of contamination from monitoring well installation and HA sampling equipment
	EQB-3						
	EQB-4						
	EQB-5						
	EQB-6		Sonic drill rod				
	Drilling Water		Driller-provided decontamination water				
Investigation Derived Waste Sample							
Drum Number	Sample ID	Matrix	IDW Source	Analysis	Rationale	Criteria	
1, 2	IDW-1-Water	Water	Decontamination and purge water	VOCs, SVOCs, RCRA metals, PFAS	Waste characterization	N/A	
4	Water Drum Sample						
9	Soil Drum Sample	Soil	Soil cuttings				

Notes:

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. DPT indicates direct push technology. 2. ft BLS indicates feet below land surface. 3. SB and SS indicate soil boring. 4. Sed indicates sediment. 5. SW indicates surface water. 6. DUP indicates duplicate. 7. TMW indicates temporary monitoring well. 8. HA indicates hand auger. 9. HSA indicates hollow stem auger. 10. PFAS indicates per- and polyfluoroalkyl substances. | <ol style="list-style-type: none"> 11. N/A indicates not applicable. 12. QA/QC indicates quality assurance/quality control. 13. FRB indicates field reagent blank. 14. EQB indicates equipment blank. 15. AFFF indicates aqueous film forming foam. 16. IDW indicates investigation derived waste. 17. VOCs indicate volatile organic compounds. 18. SVOCs indicate semi-volatile organic compounds. 19. RCRA indicates Resource Conservation and Recovery Act. 20. Product drums were labeled with permanent marker on the top as "Fire-Fighting Foam" and on the side with a label as "Chlorohexidine Gluconate 20% Solution" |
|---|---|

TABLE 3: SOIL ANALYTICAL RESULTS FOR PFAS COMPOUNDS

Palm Beach State College

Sample Location	Sample ID	Sample Date	Sample Interval (ft BLS)	PFOS	PFOA	4:2 FTS	6:2 FTS	8:2 FTS	NEtFOSAA	NMeFOSAA	PFBS	PFDS	PFDA	PFDoA	PFHpS	PFHpA	PFHxS	PFHxA	PFNS	PFNA	PFPeS	PFPeA	PFTeA	PFTriA	PFUnA	
Provisional Residential SCTL (µg/kg)				1,300	1,300	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Provisional Industrial SCTL (µg/kg)				25,000	25,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Provisional Leachability SCTL (µg/kg)				7	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
SS 1	SS-1(0-1')	8/14/2019	0-1	8.8	3.0	0.20 U	54	160	0.10 U	0.10 U	0.10 U	0.10 U	2.6	1.1	0.10 U	1.7	0.10 U	4.0	0.10 U	1.7	0.10 U	4.8	0.31 I	0.28 I	0.93	
	SS-1(1-2')		1-2	4.2	3.7	0.22 U	91	31	0.11 U	0.11 U	0.11 U	0.11 U	0.56	0.28 I	0.11 U	2.7	0.12 I	7.8	0.11 U	0.62	0.11 U	10	0.11 U	0.11 U	0.18 I	
SB-1	SB-1 (2-4')	2/4/2020	2-4	3.0	5.5	0.23 U	18	10	0.11 U	0.11 U	0.11 U	0.11 U	0.31 I	0.18 I	0.11 U	3.0	0.16 I	3.3	0.11 U	0.68	0.11 U	7.9	0.11 U	0.11 U	0.11 U	
	SB-1 (4-5')		4-5	0.40 I	0.94	0.25 U	6.8	0.35 I	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	1.4	0.13 U	1.8	0.13 U	0.16 I	0.13 U	2.9	0.13 U	0.13 U	0.13 U	
SS-2	SS-2(0-1')	8/14/2019	0-1	0.89	0.58	0.19 U	13	66	0.10 U	0.10 U	0.10 U	0.10 U	1.8	2.1	0.10 U	0.38 I	0.10 U	1.2	0.10 U	0.32 I	0.10 U	1.0	0.61	0.58	1.2	
	SS-2(1-2')		1-2	9.0	3.1	0.22 U	30	190	0.11 U	0.11 U	0.11 U	0.11 U	1.4	0.11 U	0.11 U	1.5	0.11 U	0.99	0.11 U	2.8	0.11 U	0.93	0.11 U	0.11 U	0.11 U	
SB-2	SB-2 (2-4')	2/4/2020	2-4	4.7	3.8 J	0.21 UJ	9.2	1.2 UJ	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	2.5	0.15 I	3.1	0.11 U	0.28 I	0.11 U	6.3	0.11 U	0.11 U	0.11 U	
	SB-2 (4-5')		4-5	1.3	0.68	0.22 U	14	1.5 I	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.92	0.11 U	3.7	0.11 U	0.29 I	0.11 U	5.5	0.11 U	0.11 U	0.11 U
SS-3	SS-3(0-1')	8/14/2019	0-1	2.9	0.83	0.21 U	67	310	0.10 U	0.10 U	0.10 U	0.10 U	4.2	0.99	0.10 U	1.1	0.10 U	6.3	0.10 U	1.5	0.10 U	5.6	0.31 I	0.20 I	1.5	
	SS-3(1-2')		1-2	4.2	1.6	0.20 U	150	16	0.10 U	0.10 U	0.10 U	0.10 U	0.16 I	0.10 U	0.10 U	0.37 I	0.10 U	1.4	0.10 U	1.2	0.10 U	1.7	0.10 U	0.10 U	0.10 U	
SS-4	SS-4(0-1')	8/14/2019	0-1	0.80 I	0.20 I	0.22 U	0.44 U	0.22 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.15 I	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.23 I	0.11 U	0.11 U	0.11 U
	SS-4(1-2')		1-2	0.50 I	0.11 U	0.23 U	0.45 U	0.23 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.18 I	0.11 U	0.37 I	0.11 U	0.11 U	0.11 U	0.53 I	0.11 U	0.11 U	0.11 U
SS-5	SS-5(0-1')	8/14/2019	0-1	0.90	0.12 I	0.22 U	0.44 U	0.22 UJ	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.18 I	0.11 U	0.17 I	0.11 U	0.11 U	0.11 U	0.39 I	0.11 U	0.11 U	0.11 U	
	SS-5(1-2')		1-2	0.60 I	0.14 U	0.27 U	0.54 U	0.27 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.27 U	0.14 U	0.14 U	0.14 U
SS-6	SS-6(0-1')	8/14/2019	0-1	0.79 I	0.10 U	0.20 U	0.40 U	0.20 U	0.10 U	0.10 U	0.10 U	0.10 U	0.22 I	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.15 I	0.10 U	0.20 U	0.10 U	0.10 U	0.15 I
	SS-6(1-2')		1-2	0.91 I	0.12 U	0.24 U	0.48 U	0.24 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.14 I	0.12 U	0.24 U	0.12 U	0.12 U	0.12 U
SB-6	SB-6 (2-3')	2/5/2020	2-3	1.5	0.11 U	0.23 U	0.46 U	0.23 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.15 I	0.11 U	0.12 I	0.11 U	0.31 I	0.11 U	0.46 U	0.11 U	0.11 U	0.11 U	
SS-7	SS-7(0-1')	8/14/2019	0-1	15	0.33 I	0.21 U	0.42 U	0.21 U	0.11 U	0.11 U	0.11 U	0.41 I	0.31 I	0.17 I	0.11 U	0.24 I	0.22 I	0.18 I	0.11 U	0.66	0.11 U	0.39 I	0.11 U	0.11 U	0.23 I	
	SS-7(1-2')		1-2	12	0.95	0.22 U	0.45 U	0.22 U	0.11 U	0.11 U	0.11 U	0.18 I	0.20 I	0.20 I	0.19 I	0.60	0.58	0.40 I	0.11 U	0.28 I	0.11 U	0.88 I	0.11 U	0.11 U	0.12 I	
SB-7	SB-7 (2-4')	2/4/2020	2-4	4.6	0.66	0.24 U	0.48 U	0.24 U	0.12 U	0.12 U	0.12 U	0.14 I	0.12 U	0.28 I	0.12 U	1.4	1.6	1.3	0.12 U	0.12 U	0.27 I	1.2 I	0.12 U	0.37 I	0.12 U	
	SB-7 (4-5')		4-5	1.7	0.36 I	0.26 U	0.52 U	0.26 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.23 I	0.13 U	0.69 I	4.1	0.33 I	0.13 U	0.13 U	0.36 I	0.64 I	0.13 U	0.39 I	0.13 U	
SB-3	SB-3 (0-0.5')	2/4/2020	0-0.5	0.57 I	0.74	0.21 U	0.43 U	1.7	0.11 U	0.11 UJ	0.11 U	0.11 U	1.7	0.57	0.11 U	0.81	0.11 U	1.2	0.11 U	0.54	0.11 U	1.2 I	0.11 U	0.11 U	0.54	
	SB-3 (0.5-2')		0.5-2	3.8	1.1	0.23 U	0.51 I	1.6	0.12 U	0.12 UJ	0.12 U	0.12 U	1.5	0.29 I	0.12 U	0.89	0.12 U	0.79	0.18 I	1.8	0.12 U	1.0 I	0.12 U	0.12 U	0.22 I	
	SB-3 (2-4')		2-4	14	0.93	0.22 U	0.45 UJ	0.22 UJ	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.58	0.11 UJ	0.34 I	0.11 UJ	1.6	0.11 U	0.81 I	0.11 U	0.11 U	0.11 U	
	SB-3 (4-5')		4-5	4.3	0.40 I	0.25 U	0.50 U	0.25 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.47 I	0.12 U	0.26 I	0.12 U	0.21 I	0.12 U	0.74 I	0.12 U	0.12 U	0.12 U
SB-4	SB-4 (0-0.5')	2/4/2020	0-0.5	1.5	0.38 I	0.23 U	0.46 U	0.23 U	0.12 U	0.12 U	0.12 U	0.12 U	0.42 I	0.18 I	0.12 U	0.50	0.12 U	0.22 I	0.12 U	0.38 I	0.12 U	0.87 I	0.12 U	0.12 U	0.28 I	
	SB-4 (0.5-2')		0.5-2	1.6	0.24 I	0.25 U	0.49 U	0.25 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.31 I	0.12 U	0.26 I	0.12 U	0.24 I	0.12 U	0.73 I	0.12 U	0.12 U	0.12 U	
	SB-4 (2-4')		2-4	0.69 I	0.21 I	0.24 U	0.47 U	0.24 U	0.12 U	0.12 U	0.12 U	0.12 U	0.16 I	0.17 I	0.12 U	0.29 I	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.47 U	0.12 U	0.12 U	0.12 U	
	SB-4 (4-5')		4-5	0.28 I	0.13 U	0.25 U	0.51 U	0.25 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.51 U	0.13 U	0.13 U	0.13 U
SB-5	SB-5 (0-0.5')	2/4/2020	0-0.5	3.6	0.64	0.22 U	0.45 U	0.37 I	0.11 U	0.11 U	0.11 U	0.36 I	1.5	0.46	0.11 U	0.53	1.0	0.32 I	0.23 I	0.62	0.11 U	0.47 I	0.13 I	0.18 I	1.2	
	SB-5 (0.5-2')		0.5-2	17	1.3	0.23 U	0.46 U	0.23 U	0.11 U	0.11 U	0.11 U	0.11 U	1.4	0.16 I	0.20 I	0.96	1.5	0.47	0.15 I	1.7	0.11 U	1.1 I	0.11 U	0.11 U	0.45 I	
	SB-5 (2-4')		2-4	1.6	0.34 I	0.25 U	0.51 U	0.25 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	3.0	2.8	0.90	0.13 U	0.13 U	0.13 U	2.1	0.13 U	0.13 U	0.13 U	
	SB-5 (4-5')		4-5	13	1.5	0.45 I	3.8	0.32 U	0.71	0.33 I	0.16 U	0.16 U	3.1	3.4	0.16 U	0.16 U	2.9	4.4	0.16 U	1.6	0.16 U	25	2.1	0.16 U	2.1	
SB-8	SB-8 (0-0.5')	2/5/2020	0-0.5	0.80 I	0.22 I	0.23 U	0.46 U	0.41 I	0.11 U	0.11 U	0.11 U	0.11 U	0.96	0.71	0.11 U	0.31 I	0.14 I	0.52 I	0.11 U	0.17 I	0.11 U	0.89 I	0.16 I	0.15 I	1.0	
	SB-8 (0.5-2')		0.5-2	4.5	0.24 I	0.23 U	0.47 U	0.23 U	0.12 U	0.12 U	0.12 U	0.12 U	0.58	0.12 U	0.12 U	0.45 I	0.14 I	0.55 I	0.12 U	0.65	0.12 U	0.97 I	0.12 U	0.12 U	0.16 I	
	SB-8 (2-4')		2-4	5.7	0.38 I	0.23 U	0.46 U	0.23 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.39 I	0.15 I	0.65 I	0.11 U	0.45 I	0.11 U	0.97 I	0.11 U	0.11 U	0.11 U
	SB-8 (4-5')		4-5	12	0.43 I	0.23 U	0.45 U	0.23 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.25 I	0.11 U	0.23 U	0.11 U	0.77	0.11 U	0.45 U	0.11 U	0.11 U	0.11 U
SB-9	SB-9 (0-0.5')	2/5/2020	0-0.5	1.3	0.37 I	0.25 U	0.49 U	0.25 U	0.12 U	0.12 U	0.12 U	0.12 U	0.71	0.36 I	0.12 U	0.56	0.12 U	0.52	0.12 U	0.52	0.12 U	0.98 I	0.12 U	0.12 U	0.37 I	
	SB-9 (0.5-2')		0.5-2	2.1	0.22 I	0.23 U	0.46 U	0.23 U	0.11 U	0.11 U	0.11 U	0.11 U	0.13 I	0.11 U	0.11 U	0.42 I	0.11 U	0.28 I	0.11 U	0.35 I	0.11 U	0.49 I	0.11 U	0.11 U	0.11 U	
	SB-9 (2-4')		2-4	3.4	0.12 I	0.22 U	0.43 U	0.22 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.22 I	0.11 U	0.12 I	0.11 U	0.16 I	0.11 U	0.50 I	0.11 U	0.11 U	0.11 U
	SB-9 (4-5')		4-5	0.69 I	0.12 U	0.24 U	0.49 U	0.24 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.49 U	0.12 U	0.12 U	0.12 U	0.12 U

TABLE 3: SOIL ANALYTICAL RESULTS FOR PFAS COMPOUNDS
Palm Beach State College

Sample Location	Sample ID	Sample Date	Sample Interval (ft BLS)	PFOS	PFOA	4:2 FTS	6:2 FTS	8:2 FTS	NEtFOSAA	NMeFOSAA	PFBS	PFDS	PFDA	PFDoA	PFHpS	PFHpA	PFHxS	PFHxA	PFNS	PFNA	PFPeS	PFPeA	PFTeA	PFTriA	PFUnA	
Provisional Residential SCTL (µg/kg)				1,300	1,300	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Provisional Industrial SCTL (µg/kg)				25,000	25,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Provisional Leachability SCTL (µg/kg)				7	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-21	SB-21 (0-0.5')	2/5/2020	0-0.5	0.21 U	0.10 U	0.21 U	0.41 U	0.21 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.21 U	0.10 U	0.21 U	0.10 U	0.10 U	0.10 U	0.41 U	0.10 U	0.10 U	0.10 U	
	SB-21 (0.5-2')		0.5-2	0.20 U	0.10 U	0.20 U	0.40 U	0.20 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.12 I	0.10 U	0.20 U	0.10 U	0.20 U	0.10 U	0.10 U	0.10 U	0.21 I	0.50 I	0.10 U	0.30 I	0.10 U
	SB-21 (2-4')		2-4	0.21 U	0.10 U	0.21 U	0.41 U	0.21 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.21 U	0.10 U	0.21 U	0.10 U	0.10 U	0.10 U	0.10 U	0.41 U	0.10 U	0.10 U	0.10 U
	SB-21 (4-5')		4-5	0.76 I	0.12 U	0.24 U	0.49 U	0.24 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.18 I	0.12 U	0.24 U	0.12 U	0.24 U	0.12 U	0.12 U	0.12 U	0.26 I	0.53 I	0.12 U	0.36 I
SB-22	SB-22 (0-0.5')	2/4/2020	0-0.5	0.47 I	0.26 I	0.23 U	0.45 U	0.23 U	0.11 U	0.11 U	0.11 U	0.11 U	0.14 I	0.11 U	0.11 U	0.16 I	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.45 U	0.11 U	0.11 U	0.11 U	
	SB-22 (0.5-2')		0.5-2	1.4	0.21 I	0.22 U	0.44 U	0.22 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.12 I	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.44 U	0.11 U	0.11 U	0.11 U
	SB-22 (2-4')		2-4	0.40 I	0.11 U	0.22 U	0.44 U	0.22 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.44 U	0.11 U	0.11 U	0.11 U
	SB-22 (4-5')		4-5	0.30 I	0.12 U	0.24 U	0.48 U	0.24 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.48 U	0.12 U	0.12 U	0.12 U
SB-23	SB-23 (0-0.5')	2/5/2020	0-0.5	0.90	0.13 I	0.22 U	0.44 U	0.22 U	0.11 U	0.11 U	0.11 U	0.14 I	0.21 I	0.13 I	0.11 U	0.22 U	0.11 U	0.22 U	0.11 U	0.18 I	0.11 U	0.44 U	0.11 U	0.11 I	0.12 I	
	SB-23 (0.5-2')		0.5-2	0.93	0.15 I	0.22 U	0.43 U	0.22 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.24 I	0.11 U	0.22 U	0.11 U	0.11 U	0.11 U	0.60 I	0.11 U	0.11 U	0.11 U	
	SB-23 (2-4')		2-4	0.29 I	0.11 U	0.22 U	0.43 U	0.22 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.22 U	0.11 U	0.22 U	0.11 U	0.11 U	0.11 U	0.43 U	0.11 U	0.11 U	0.11 U	

Notes:

1. Results and screening criteria are presented in micrograms per kilogram (µg/kg).
2. ft BLS indicates feet below land surface.
3. U indicates that the compound was analyzed for but not detected (the laboratory method detection limit (MDL) is shown).
4. I indicates the result is between the laboratory MDL and the practical quantitation limit.
5. J indicates an estimated value and/or the analysis did not meet established quality control criteria.
6. Grey shaded, bold text indicates an exceedance of the FDEP provisional leachability SCTL.
7. "--" indicates no screening criteria.

Analyte	Acronym
Perfluorooctanesulfonic acid	PFOS
Perfluorooctanoic acid	PFQA
4:2 Fluorotelomer sulfonate	4:2 FTS
6:2 Fluorotelemer sulfonate	6:2 FTS
8:2 Fluorotelemer sulfonate	8:2 FTS
N-ethylperfluorooctanesulfonamidoacetic acid	NEtFOSAA
N-methylperfluorooctanesulfonamidoacetic acid	NMeFOSAA
Perfluorobutanesulfonic acid	PFBS
Perfluorodecanesulfonic acid	PFDS
Perfluorodecanoic acid	PFDA
Perfluorododecanoic acid	PFDoA
Perfluoroheptanesulfonic acid	PFHpS
Perfluoroheptanoic acid	PFHpA
Perfluorohexanesulfonic acid	PFHxS
Perfluorohexanoic acid	PFHxA
Perfluorononanesulfonic acid	PFNS
Perfluorononanoic acid	PFNA
Perfluoropentanesulfonic acid	PFPeS
Perfluoropentanoic acid	PFPeA
Perfluorotetradecanoic acid	PFTeA
Perfluorotridecanoic Acid	PFTriA
Perfluoroundecanoic acid	PFUnA

TABLE 4: WELL CONSTRUCTION DETAILS
Palm Beach State College

Well ID	Date Installed	Installation Method	Type	Top of Casing Elevation	Total Depth (ft BLS)	Screened Interval (ft BLS)	Well Diameter (inches)	Lithology of Screened Interval
DEPMW-1 (3-13')	2/5/2020	HSA	Permanent	11.16	13	3 - 13	2	Silty sand
DEPMW-2 (3-13')				10.01				
DEPMW-3 (3-13')	2/6/2020			9.34				
DEPMW-4 (3-13')				11.81				
DEPMW-5 (3-13')	2/5/2020			11.59				
DEPMW-6 (3-13')	2/6/2020			11.28				
DEPMW-7 (3-13')	2/5/2020			11.00				
DEPMW-8 (3-13')				12.31				
DEPMW-9 (85-105')	2/25/2020	Sonic	Permanent	9.44	105	85 - 105	2	Sand with silt
DEPMW-10 (87-107')	2/27/2020			9.18	107	87 - 107		
DEPMW-11 (45-65')	2/28/2020			9.49	65	45 - 65		
DEPMW-12 (45-65')				9.44				
DEPMW-13 (45-65')	2/29/2020			11.10				
TMW-1 (4-14')	8/14/2019	DPT	Temporary	NM	14	4 - 14	1	Not collected
TMW-2 (4-14')								

Notes:

1. ft BLS indicates feet below land surface.
2. HSA indicates hollow stem auger.
3. DPT indicates direct push technology.
4. Top of casing elevations are relative to ft North American Vertical Datum 1988 (NAVD 88).
5. NM indicates not measured.

TABLE 5: GROUNDWATER ELEVATION SUMMARY
Palm Beach State College

WELL ID	DEPMW-1 (3-13')		DEPMW-2 (3-13')		DEPMW-3 (3-13')		DEPMW-4 (3-13')		DEPMW-5 (3-13')	
DIAMETER (inches)	2		2		2		2		2	
WELL DEPTH (ft BLS)	13		13		13		13		13	
SCREEN INTERVAL (ft BLS)	3 - 13		3 - 13		3 - 13		3 - 13		3 - 13	
TOC ELEVATION (ft NAVD88)	11.16		10.01		9.34		11.81		11.59	
DATE	DTW	ELEV	DTW	ELEV	DTW	ELEV	DTW	ELEV	DTW	ELEV
3/4/2020	4.27	6.89	3.08	6.93	2.44	6.90	4.88	6.93	4.69	6.90

WELL ID	DEPMW-6 (3-13')		DEPMW-7 (3-13')		DEPMW-8 (3-13')		DEPMW-9 (85-105')		DEPMW-10 (87-107')	
DIAMETER (inches)	2		2		2		2		2	
WELL DEPTH (ft BLS)	13		13		13		105.0		107.0	
SCREEN INTERVAL (ft BLS)	3 - 13		3 - 13		3 - 13		85 - 105		87 - 107	
TOC ELEVATION (ft NAVD88)	11.28		11.00		12.31		9.44		9.18	
DATE	DTW	ELEV	DTW	ELEV	DTW	ELEV	DTW	ELEV	DTW	ELEV
3/4/2020	4.37	6.91	4.03	6.97	5.24	7.07	2.76	6.68	2.38	6.80

WELL ID	DEPMW-11 (45-65')		DEPMW-12 (45-65')		DEPMW-13 (45-65')	
DIAMETER (inches)	2		2		2	
WELL DEPTH (ft BLS)	65		65		65	
SCREEN INTERVAL (ft BLS)	45 - 65		45 - 65		45 - 65	
TOC ELEVATION (ft NAVD88)	9.49		9.44		11.10	
DATE	DTW	ELEV	DTW	ELEV	DTW	ELEV
3/4/2020	2.60	6.89	2.54	6.90	4.21	6.89

Notes:

1. DTW indicates depth to groundwater measured in feet below top of casing (ft BTOC).
2. ELEV indicates groundwater elevation in feet relative to feet North American Vertical Datum 1988 (ft NAVD 88).
3. ft BLS indicates feet below land surface.
4. Top of casing (TOC) elevations are relative to ft NAVD 88.

TABLE 6: GROUNDWATER ANALYTICAL RESULTS FOR PFAS COMPOUNDS
Palm Beach State College

Sample Location	Field Sample ID	Sample Date	Sample Interval (ft BLS)	PFOS	PFOA	PFOA + PFOS	4:2 FTS	6:2 FTS	8:2 FTS	NEtFOSAA	NMeFOSAA	PFBS	PFDS	PFDA	PFDoA	PFHpS	PFHpA	PFHxS	PFHxA	PFNS	PFNA	PFPeS	PFPeA	PFTeA	PFTriA	PFUnA
Provisional GCTL (ng/L)				70	70	70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TMW-1	TMW-1(4-14)	8/14/2019	4 to 14	490	2,200	2,690	3.5 I	31,000	400	0.38 U	0.38 U	7.1	0.38 U	25	0.94 U	5.0	4,200	55	8,900	0.38 U	530	4.4	12,000	0.38 U	0.38 U	0.94 U
	DUP-2		4 to 14	490	2,000	2,490	3.6 I	28,000	360	0.38 U	0.38 U	7.0	0.38 U	26	0.95 U	5.0	4,500	58	9,600	0.38 U	510	4.5	12,000	0.38 U	0.38 U	0.95 U
TMW-2	TMW-2(4-14')	8/14/2019	4 to 14	23,000	110	23,110	29 I	1,900	920	3.8 U	3.8 U	53	3.8 U	9.6 U	0.96 U	63	290	1,600	860	3.8 U	81	97	880	0.38 U	0.38 U	0.96 U
DEPMW-1	DEPMW-1 (3-13')	3/4/2020	3 to 13	210	920	1,130	2.4 I	3,900	190 I	0.40 U	0.40 U	6.7	0.40 U	8.6	1.0 U	3.4	1,700 J	23	5,400	0.40 U	230	3.1	7,900	0.40 U	0.40 UJ	1.0 U
DEPMW-2	DEPMW-2 (3-13')	3/4/2020	3 to 13	570	21	591	2.0 U	54	37	0.40 U	0.40 U	15	0.40 U	1.9 I	1.0 U	1.7	37 J	89	81	0.53 I	15	9.3	110	0.40 U	0.40 UJ	1.0 U
DEPMW-3	DEPMW-3 (3-13')	3/4/2020	3 to 13	200	22	222	2.0 U	200	53	0.40 U	0.40 U	26	0.40 U	2.5 IJ	1.0 U	2.2	40 J	96	55	0.40 U	3.3 I	17	52	0.40 U	0.40 UJ	1.0 U
DEPMW-4	DEPMW-4 (3-13')	3/4/2020	3 to 13	36	6.9	43	2.0 U	4.0 U	2.0 U	0.40 U	0.40 U	9.1	0.40 U	1.0 UJ	1.0 U	0.78 I	7.6 IJ	19	6.1 I	0.40 U	1.9 I	1.7	7.2 I	0.40 U	0.40 UJ	1.0 U
DEPMW-5	DEPMW-5 (3-13')	3/4/2020	3 to 13	64	150	214	2.0 U	200	100	0.42 I	0.40 U	22	0.40 U	1.0 UJ	1.0 U	3.3	480 J	240	730	0.40 U	21	20	1,100	0.40 U	0.40 UJ	1.0 U
DEPMW-6	DEPMW-6 (3-13')	3/4/2020	3 to 13	6.6 I	4.7	11	2.0 U	4.0 U	2.0 U	0.40 U	0.40 U	2.8	0.40 U	1.0 UJ	1.0 U	0.40 U	4.6 IJ	2.8	6.7 I	0.40 U	1.0 I	0.42 I	8.9 I	0.40 U	0.40 UJ	1.0 U
DEPMW-7	DEPMW-7 (3-13')	3/4/2020	3 to 13	37	19	56	2.0 U	5.0 I	2.0 U	0.40 U	0.40 U	14	0.40 U	1.0 IJ	1.0 U	1.3 I	32	64	110	0.40 U	3.8 I	9.2	150	0.40 U	0.40 UJ	1.0 U
	DEPMW-7 (3-13') DUP		3 to 13	43	20	63	2.0 U	4.2 I	2.0 U	0.40 U	0.40 U	14	0.40 U	1.5 U	1.0 U	1.5 I	39	69	130	0.40 U	4.1	10	170	0.40 U	0.40 UJ	1.0 U
DEPMW-8	DEPMW-8 (3-13')	3/4/2020	3 to 13	35	5.1	40	2.0 U	4.0 U	2.0 U	0.40 U	0.40 U	2.6	0.40 U	1.0 UJ	1.0 U	0.40 U	3.3 IJ	1.3 I	3.0 I	0.40 U	1.8 I	0.40 U	4.9 I	0.40 U	0.40 UJ	1.0 U
DEPMW-9	DEPMW-9 (85-105')	3/4/2020	85 to 105	2.0 U	1.8 I	2.9	2.0 U	4.0 U	2.3 I	0.40 U	0.40 U	0.57 I	0.40 U	1.2 IJ	1.0 U	0.40 U	2.0 UJ	0.40 U	2.0 U	0.40 U	1.5 I	0.40 U	4.0 U	0.40 U	0.40 UJ	1.0 U
DEPMW-10	DEPMW-10 (87-107')	3/4/2020	87 to 107	2.0 U	1.0 U	1.5	2.0 U	8.0 I	2.0 U	0.40 U	0.40 U	0.88 I	0.40 U	1.0 U	1.0 U	0.40 U	2.0 UJ	0.40 U	2.0 U	0.40 U	1.0 U	0.40 U	4.0 U	0.40 U	0.40 UJ	1.0 U
DEPMW-11	DEPMW-11 (45-65')	3/4/2020	45 to 65	310	19	329	2.0 U	190	23	0.40 U	0.40 U	15	0.40 U	2.4 I	1.0 U	6.9	46 J	160	80	0.40 U	4.6	26	84	0.40 U	0.40 UJ	1.0 U
DEPMW-12	DEPMW-12 (45-65')	3/4/2020	45 to 65	13	7.1	20	2.0 U	4.0 U	2.0 U	0.40 U	0.40 U	2.8	0.40 U	1.0 UJ	1.0 U	0.40 U	3.5 IJ	1.6	4.7 I	0.40 U	1.0 U	0.40 U	9.8 I	0.40 U	0.40 UJ	1.0 U
DEPMW-13	DEPMW-13 (45-65')	3/4/2020	45 to 65	11	11	22	2.0 U	4.0 U	2.0 U	0.40 U	0.40 U	14	0.40 U	1.0 U	1.0 U	0.40 U	18 J	9.8	9.7	0.40 U	1.0 I	1.5 I	11 I	0.40 U	0.40 UJ	1.0 U
	DEPMW-13 (45-65') DUP		45 to 65	10	12	22	2.0 U	4.0 U	2.0 U	0.40 U	0.40 U	13	0.40 U	1.0 U	1.0 U	0.40 U	16 J	9.7	9.5	0.40 U	1.2 I	1.4 I	12 I	0.40 U	0.40 UJ	1.0 U

Notes:

1. Results and screening criteria are presented in nanograms per liter (ng/L).
2. PFOA + PFOS indicates the summation of PFOA and PFOS concentrations.
3. Blue shaded, bold text indicates an exceedance of the Florida Department of Environmental Protection provisional groundwater cleanup target level (GCTL).
4. -- indicates no applicable cleanup target level.
5. U indicates material was analyzed for but not detected. The reported value is the method detection limit (MDL) for the sample analyzed.
6. I indicates the reported value is between the laboratory MDL and the laboratory practical quantitation limit.
7. J indicates estimated value and/or the analysis did not meet the quality control criteria.
8. PFAS indicates per- and polyfluoroalkyl substances.

Analyte	Acronym
Perfluorooctanesulfonic acid	PFOS
Perfluorooctanoic acid	PFOA
4:2 Fluorotelomer sulfonate	4:2 FTS
6:2 Fluorotelomer sulfonate	6:2 FTS
8:2 Fluorotelomer sulfonate	8:2 FTS
N-ethylperfluorooctanesulfonamidoacetic acid	NEtFOSAA
N-methylperfluorooctanesulfonamidoacetic acid	NMeFOSAA
Perfluorobutanesulfonic acid	PFBS
Perfluorodecanesulfonic acid	PFDS
Perfluorodecanoic acid	PFDA
Perfluorododecanoic acid	PFDoA
Perfluoroheptanesulfonic acid	PFHpS
Perfluoroheptanoic acid	PFHpA
Perfluorohexanesulfonic acid	PFHxS
Perfluorohexanoic acid	PFHxA
Perfluorononanesulfonic acid	PFNS
Perfluorononanoic acid	PFNA
Perfluoropentanesulfonic acid	PFPeS
Perfluoropentanoic acid	PFPeA
Perfluorotetradecanoic acid	PFTeA
Perfluorotridecanoic acid	PFTriA
Perfluoroundecanoic acid	PFUnA

TABLE 7: SURFACE WATER ANALYTICAL RESULTS FOR PFAS COMPOUNDS
Palm Beach State College

Sample Location	Field Sample ID	Sample Date	PFOS	PFOA	PFOA + PFOS	4:2 FTS	6:2 FTS	8:2 FTS	NEtFOSAA	NMeFOSAA	PFBS	PFDS	PFDA	PFDoA	PFHpS	PFHpA	PFHxS	PFHxA	PFNS	PFNA	PFPeS	PFPeA	PFTeA	PFTriA	PFUnA
SW-1	SW-1	8/14/2019	9.0	16	25	1.9 U	570	210	0.38 U	0.38 U	0.54 I	0.38 U	7.0	2.2 I	0.38 U	20	2.5	80	0.38 U	5.6	0.38 U	69	0.38 U	0.49 I	2.5 I
	DUP-1		8.9	15	24	1.9 U	540	210	0.38 U	0.38 U	0.54 I	0.38 U	6.2	2.8 I	0.38 U	20	2.4	71	0.38 U	5.2	0.38 U	70	0.38 U	0.43 I	2.8 I
SW-2	SW-2	8/14/2019	46	8.2	54	1.9 U	500	36	0.38 U	0.38 U	11	0.38 U	0.95 U	0.95 U	0.54 I	6.3	7.3	20	0.38 U	1.5 I	0.58 I	19	0.38 U	0.38 U	0.95 U

Notes:

1. Results are presented in nanograms per liter (ng/L).
2. Surface water screening levels are under development.
3. PFOA + PFOS indicates the summation of PFOA and PFOS concentrations.
4. U indicates material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
5. I indicates result is between the laboratory method detection limit and the laboratory practical quantitation limit.
6. PFAS indicates per- and polyfluoroalkyl substances.

Analyte	Acronym
Perfluorooctanesulfonic acid	PFOS
Perfluorooctanoic acid	PFOA
4:2 Fluorotelomer sulfonate	4:2 FTS
6:2 Fluorotelemer sulfonate	6:2 FTS
8:2 Fluorotelemer sulfonate	8:2 FTS
N-ethylperfluorooctanesulfonamidoacetic acid	NEtFOSAA
N-methylperfluorooctanesulfonamidoacetic acid	NMeFOSAA
Perfluorobutanesulfonic acid	PFBS
Perfluorodecanesulfonic acid	PFDS
Perfluorodecanoic acid	PFDA
Perfluorododecanoic acid	PFDoA
Perfluoroheptanesulfonic acid	PFHpS
Perfluoroheptanoic acid	PFHpA
Perfluorohexanesulfonic acid	PFHxS
Perfluorohexanoic acid	PFHxA
Perfluorononanesulfonic acid	PFNS
Perfluorononanoic acid	PFNA
Perfluoropentanesulfonic acid	PFPeS
Perfluoropentanoic acid	PFPeA
Perfluorotetradecanoic acid	PFTeA
Perfluorotridecanoic acid	PFTriA
Perfluoroundecanoic acid	PFUnA

TABLE 8: SEDIMENT ANALYTICAL RESULTS FOR PFAS COMPOUNDS

Palm Beach State College

Sample Location	Field Sample ID	Sample Date	Sample Interval (ft BLS)	PFOS	PFOA	4:2 FTS	6:2 FTS	8:2 FTS	NEtFOSAA	NMeFOSAA	PFBS	PFDS	PFDA	PFDoA	PFHpS	PFHpA	PFHxS	PFHxA	PFNS	PFNA	PFPeS	PFPeA	PFTeA	PFTriA	PFUnA
Sed-1	Sed-1(0-1')	8/14/2019	0 to 1	0.44 I	0.14 U	0.28 U	1.6 I	0.96 I	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.54 I	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.28 U	0.17 I	0.22 I	0.16 I
Sed-2	Sed-2(0-1')	8/14/2019	0 to 1	1.2	0.13 U	0.26 U	3.1	1.8	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.26 U	0.13 U	0.13 U	0.17 I
Sed-3	Sed-3(0-1')	8/14/2019	0 to 1	15	0.36 I	0.26 U	15	30	0.13 U	0.13 U	0.13 U	0.13 U	0.48 I	0.61	0.13 U	0.13 U	0.61	0.49 I	0.13 U	0.13 U	0.13 U	0.26 U	0.63	0.44 I	0.25 I
Sed-4	Sed-4(0-1')	8/14/2019	0 to 1	0.29 I	0.12 U	0.24 U	5.3	2.8	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.34 I	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.24 U	0.39 I	0.30 I	0.12 U
Sed-5	Sed-5(0-1')	8/14/2019	0 to 1	6.6	0.12 U	0.24 U	1.2 I	0.98	0.13 I	0.12 U	0.12 U	0.12 U	0.12 U	0.26 I	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.24 U	0.39 I	0.26 I	0.12 U
Sed-6	Sed-6(0-1')	8/14/2019	0 to 1	27	0.12 U	0.25 U	6.5	1.7	0.12 U	0.12 U	0.12 U	0.73	0.12 U	0.18 I	0.12 U	0.12 U	0.38 I	0.27 I	0.12 U	0.12 U	0.12 U	0.25 U	0.18 I	0.15 I	0.12 U
Sed-7	Sed-7(0-1')	8/14/2019	0 to 1	0.24 U	0.12 U	0.24 U	0.48 U	0.24 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.24 U	0.12 U	0.12 U	0.12 U

Notes:

1. Results are presented in micrograms per kilogram (µg/Kg).
2. Provisional cleanup target levels have not been established for sediment.
3. U indicates material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
4. I indicates result is between the laboratory method detection limit and the laboratory practical quantitation limit.
5. PFAS indicates per- and polyfluoroalkyl substances.

Analyte	Acronym
Perfluorooctanesulfonic acid	PFOS
Perfluorooctanoic acid	PFOA
4:2 Fluorotelomer sulfonate	4:2 FTS
6:2 Fluorotelomer sulfonate	6:2 FTS
8:2 Fluorotelomer sulfonate	8:2 FTS
N-ethylperfluorooctanesulfonamidoacetic acid	NEtFOSAA
N-methylperfluorooctanesulfonamidoacetic acid	NMeFOSAA
Perfluorobutanesulfonic acid	PFBS
Perfluorodecanesulfonic acid	PFDS
Perfluorodecanoic acid	PFDA
Perfluorododecanoic acid	PFDoA
Perfluoroheptanesulfonic acid	PFHpS
Perfluoroheptanoic acid	PFHpA
Perfluorohexanesulfonic acid	PFHxS
Perfluorohexanoic acid	PFHxA
Perfluorononanesulfonic acid	PFNS
Perfluorononanoic acid	PFNA
Perfluoropentanesulfonic acid	PFPeS
Perfluoropentanoic acid	PFPeA
Perfluorotetradecanoic acid	PFTeA
Perfluorotridecanoic acid	PFTriA
Perfluoroundecanoic acid	PFUnA

TABLE 9: FIREFIGHTING FOAM ANALYTICAL RESULTS FOR PFAS COMPOUNDS
Palm Beach State College

Sample Location	Field Sample ID	Sample Date	PFOS	PFOA	4:2 FTS	6:2 FTS	8:2 FTS	NEtFOSAA	NMeFOSAA	PFBS	PFDS	PFDA	PFDoA	PFHpS	PFHpA	PFHxS	PFHxA	PFNS	PFNA	PFPeS	PFPeA	PFTeA	PFTriA	PFUnA
Firefighting Foam	Chlorhexidine Gluconate	8/14/2019	870,000	7,400	NA	NA	NA	25 U	25 U	15,000 I	NA	25 U	25 U	NA	3,800	85,000	9,700	NA	25 IJ	NA	NA	25 UJ	25 U	25 U

Notes:

1. Results are presented in micrograms per kilogram (µg/Kg).
2. U indicates material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
3. I indicates result is between the laboratory method detection limit and the laboratory practical quantitation limit.
4. J indicates estimated value and/or the analysis did not meet the quality control criteria.
5. NA indicates not analyzed.
6. Product drums were labeled with permanent marker on the top as "Fire-Fighting Foam" and on the side with a label as "Chlorohexidine Gluconate 20% Solution"
7. PFAS indicates per- and polyfluoroalkyl substances.

Analyte	Acronym
Perfluorooctanesulfonic acid	PFOS
Perfluorooctanoic acid	PFOA
4:2 Fluorotelomer sulfonate	4:2 FTS
6:2 Fluorotelemer sulfonate	6:2 FTS
8:2 Fluorotelemer sulfonate	8:2 FTS
N-ethylperfluorooctanesulfonamidoacetic acid	NEtFOSAA
N-methylperfluorooctanesulfonamidoacetic acid	NMeFOSAA
Perfluorobutanesulfonic acid	PFBS
Perfluorodecanesulfonic acid	PFDS
Perfluorodecanoic acid	PFDA
Perfluorododecanoic acid	PFDoA
Perfluoroheptanesulfonic acid	PFHpS
Perfluoroheptanoic acid	PFHpA
Perfluorohexanesulfonic acid	PFHxS
Perfluorohexanoic acid	PFHxA
Perfluoronanesulfonic acid	PFNS
Perfluoronanoic acid	PFNA
Perfluoropentanesulfonic acid	PFPeS
Perfluoropentanoic acid	PFPeA
Perfluorotetradecanoic acid	PFTeA
Perfluorotridecanoic acid	PFTriA
Perfluoroundecanoic acid	PFUnA

FIGURES



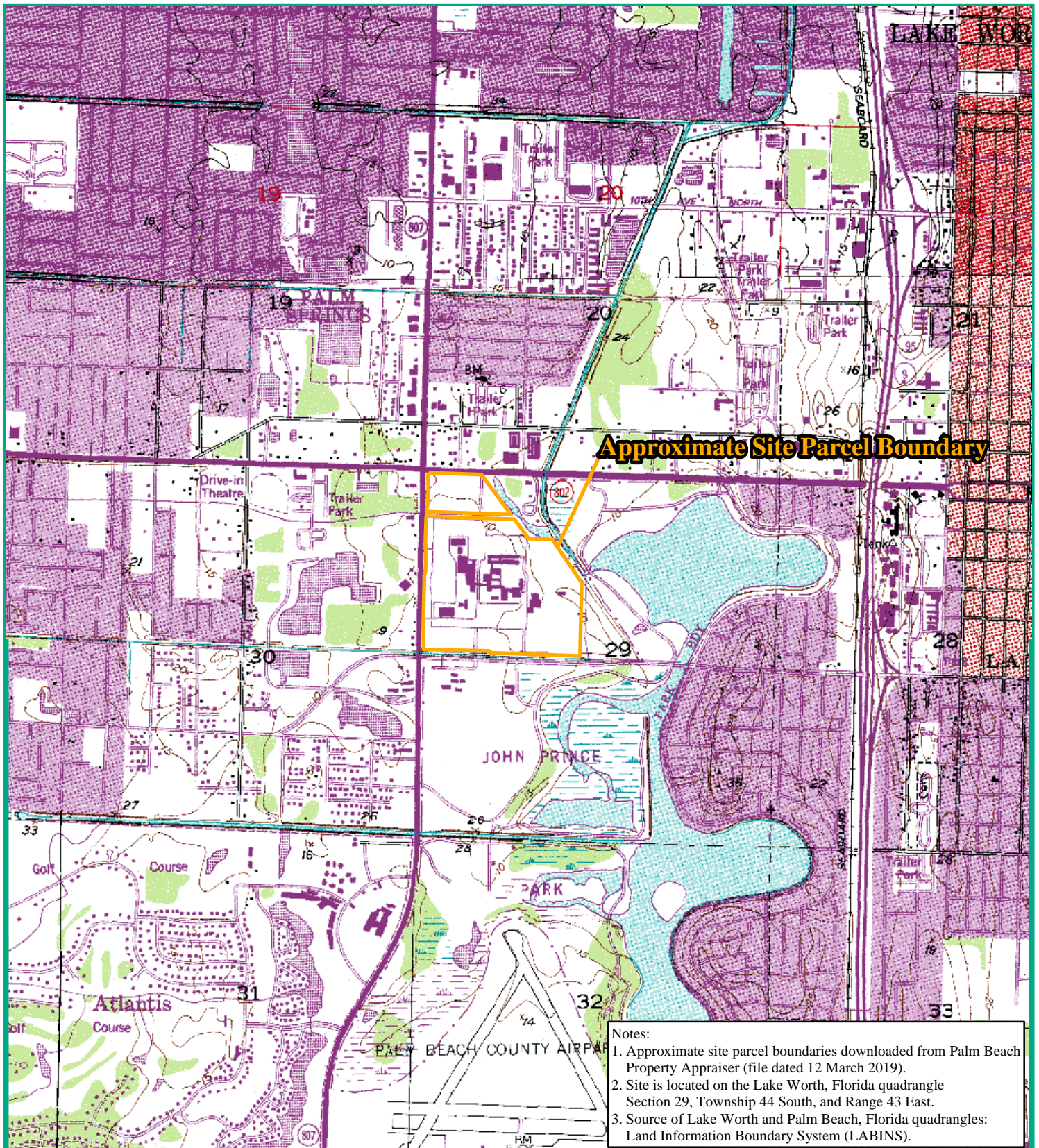


Figure 1
USGS Site Topographic Map
Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County,
Florida



Date: May 14, 2020



2,000

Feet



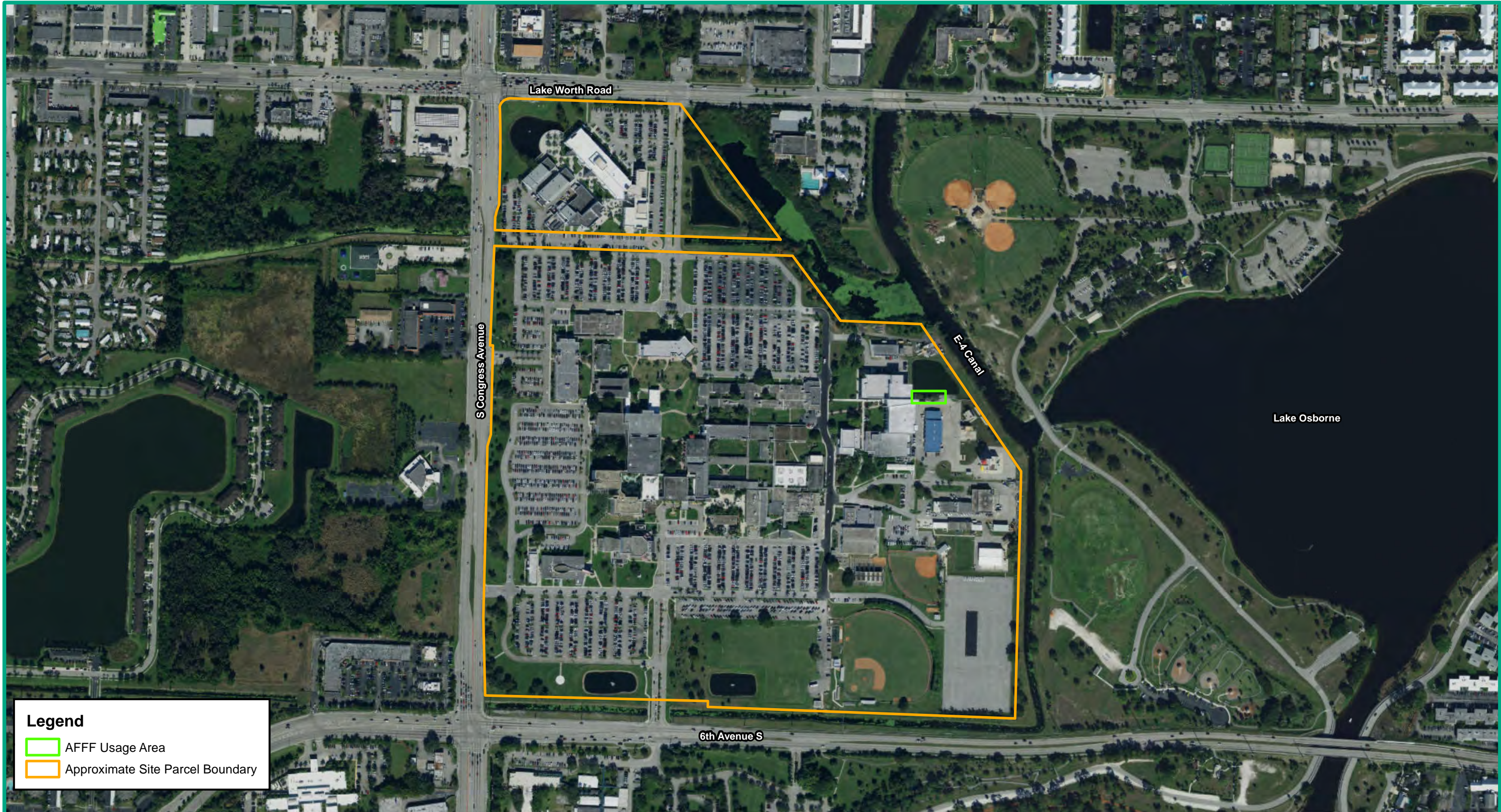
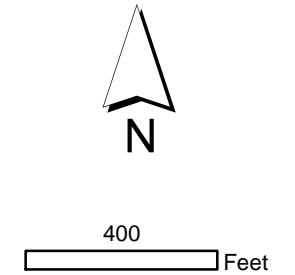
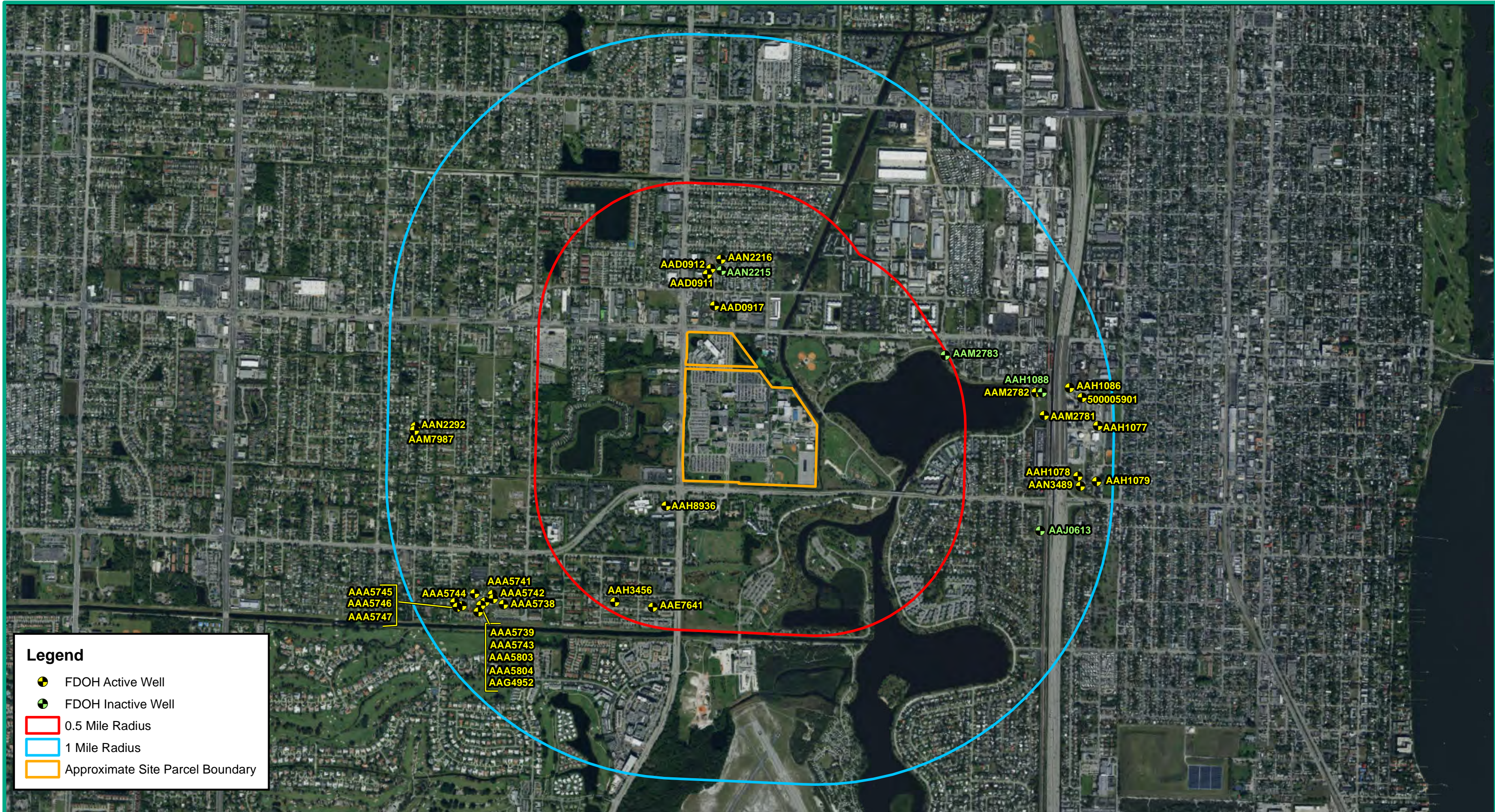


Figure 2
Site Vicinity Map
Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County, Florida

Notes:
 1. AFFF indicates aqueous film forming foam.
 2. Approximate site parcel boundaries downloaded from Palm Beach Property Appraiser (file dated 12 March 2019).
 3. Source of 2018 World Imagery: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Date: May 14, 2020





Legend

- FDOH Active Well
- FDOH Inactive Well
- 0.5 Mile Radius
- 1 Mile Radius
- Approximate Site Parcel Boundary

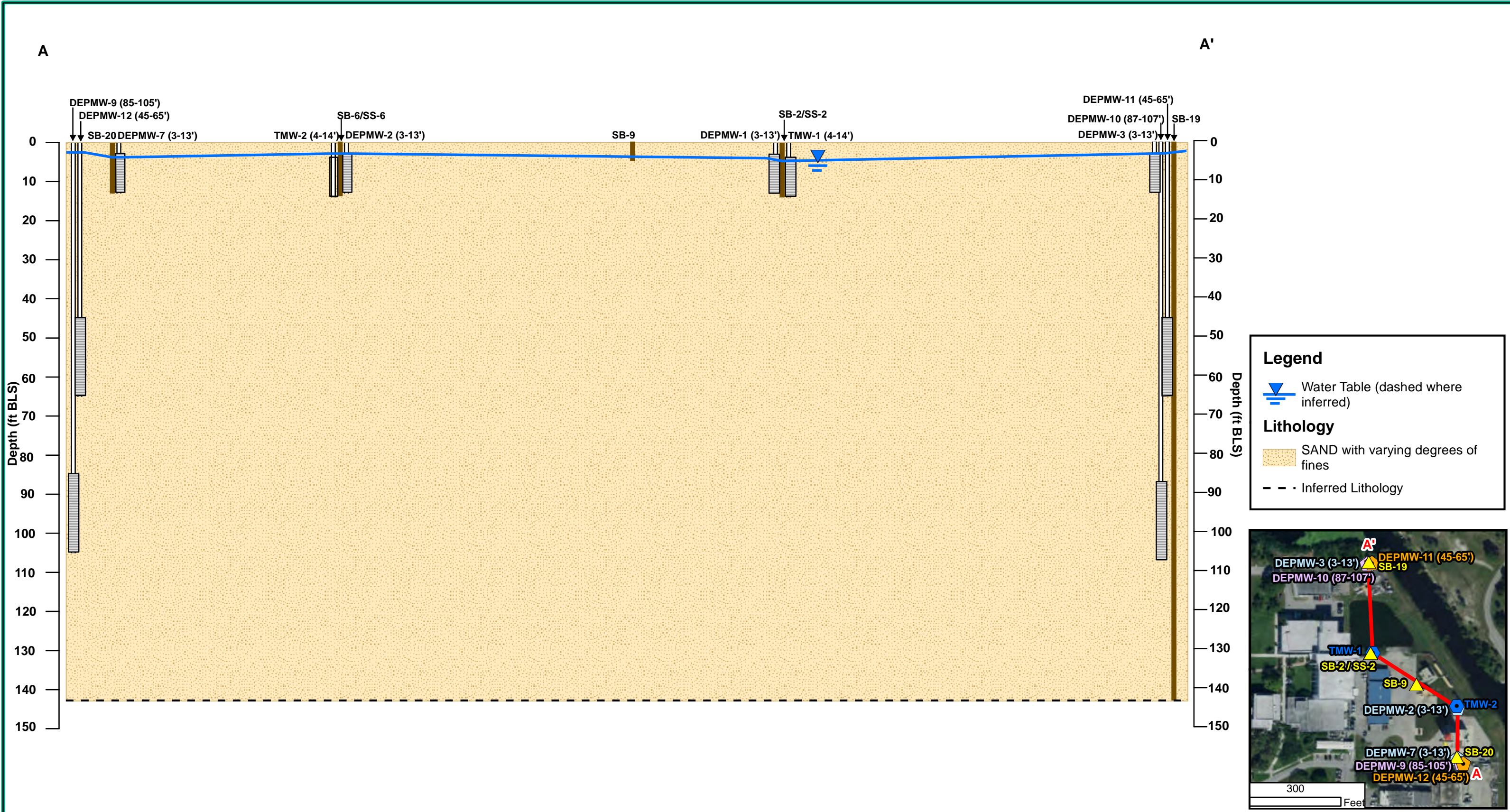
Figure 3
Water Wells within a 1-mile Radius
Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County,
Florida

Notes:

1. Source of Florida Department of Health (FDOH) wells: well surveillance program data download dated 13 April 2020.
2. Active indicates the well is used on a regular basis or will be used within a reasonable period of time (2-3 months). Inactive indicates the well has not been regularly used within the past 6-12 months but is maintained in such a state that it could be used.
3. Approximate site parcel boundaries downloaded from Palm Beach Property Appraiser (file dated 12 March 2019).
4. Source of 2018 World Imagery: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Date: May 14, 2020





Legend

- Water Table (dashed where inferred)
- SAND with varying degrees of fines
- Inferred Lithology

Lithology

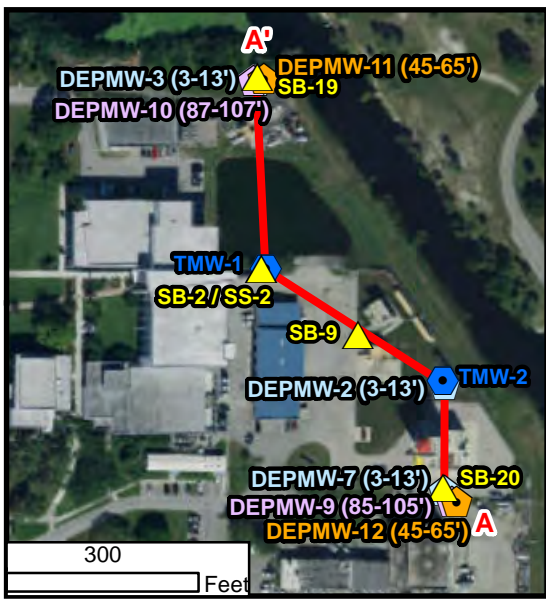
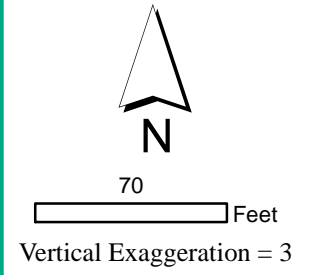
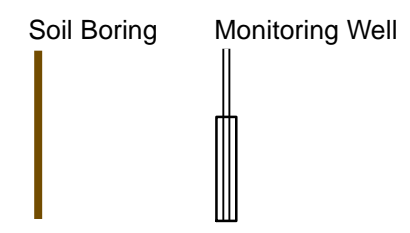
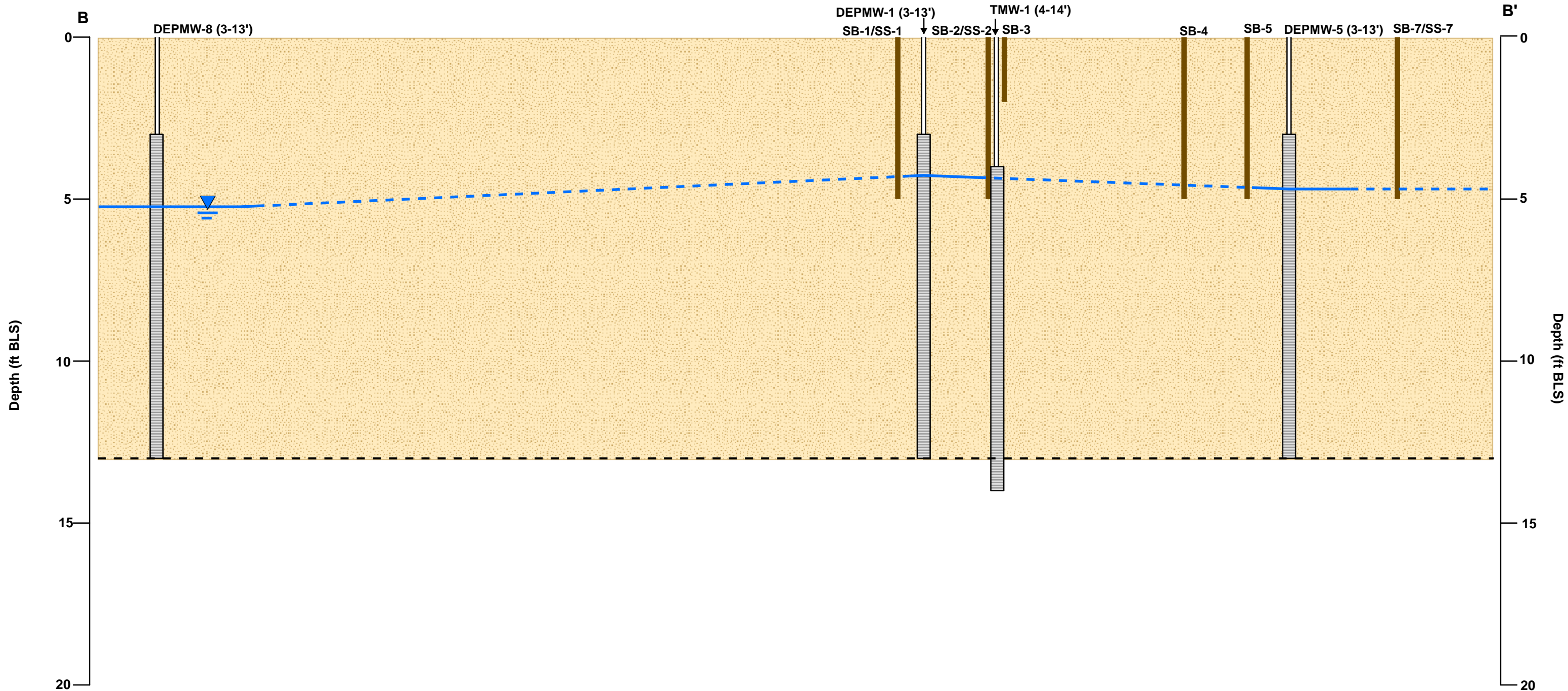


Figure 4
Cross Section A-A'
Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County, Florida

Notes:
 1. ft BLS indicates feet below land surface.
 2. Source of 2018 World Imagery: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

Date: May 14, 2020





Legend

Water Table (dashed where inferred)

Lithology

SAND with varying degrees of fines

Inferred

Inferred Lithology

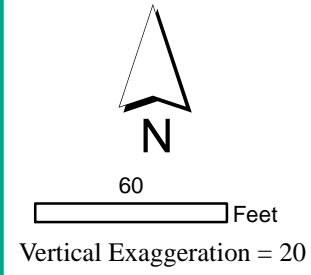
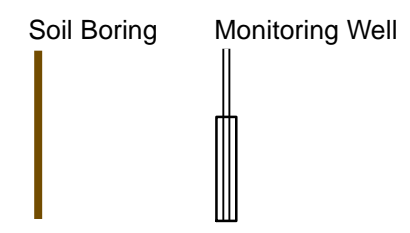


Figure 5
Cross Section B-B'
Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County, Florida

Notes:

1. ft BLS indicates feet below land surface.
2. Source of 2018 World Imagery: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

Date: May 14, 2020



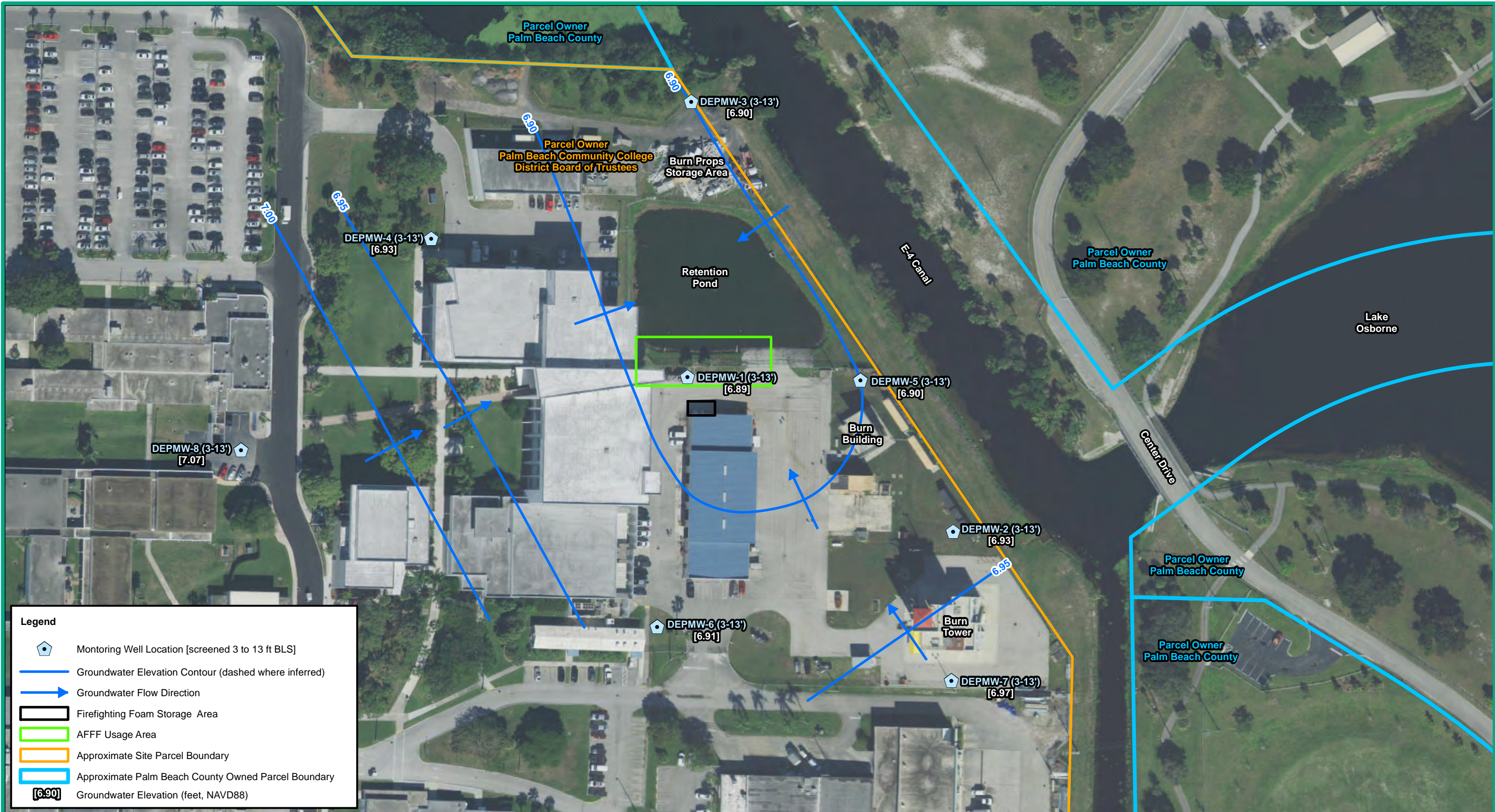
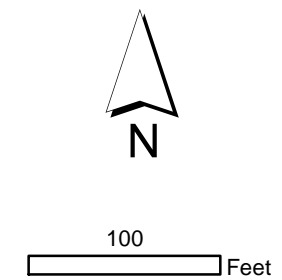


Figure 6
Groundwater Elevation Map from 3 to 13 ft BLS
Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County, Florida

Date: May 14, 2020



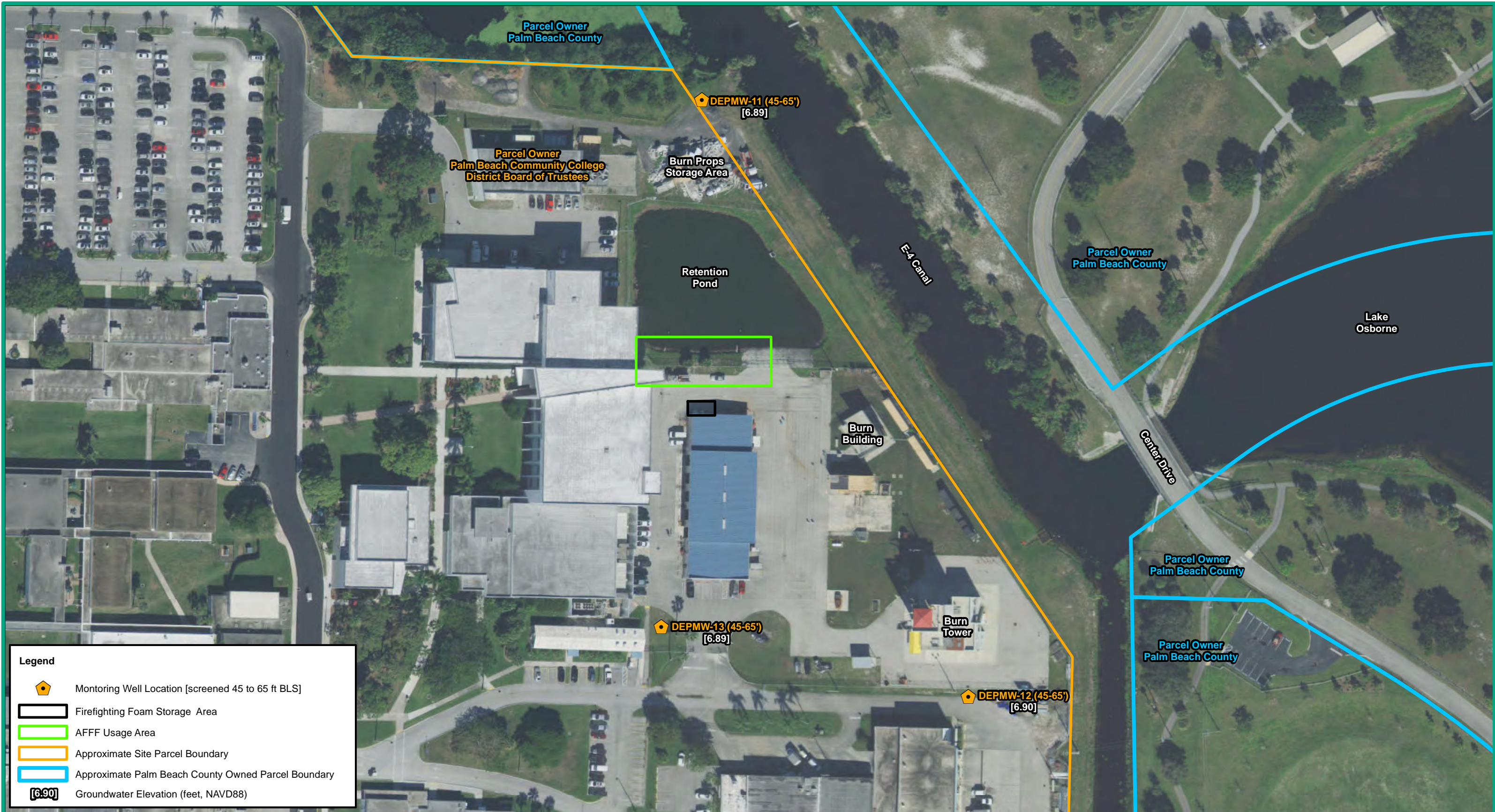
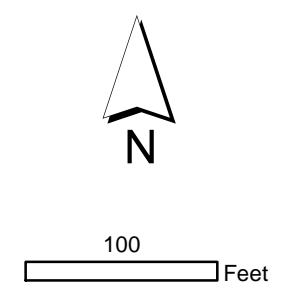


Figure 7
Groundwater Elevation Map from 45 to 65 ft BLS
Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County, Florida

Notes:

1. NAVD88 indicates North American Vertical Datum of 1988.
2. ft BLS indicates feet below land surface.
3. Depth-to-water measurements were collected on 4 March 2020.
4. AFFF indicates aqueous film forming foam.
5. Approximate parcel boundaries downloaded from Palm Beach Property Appraiser (file dated 12 March 2019).
6. Source of 2019 World Imagery: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Date: May 14, 2020



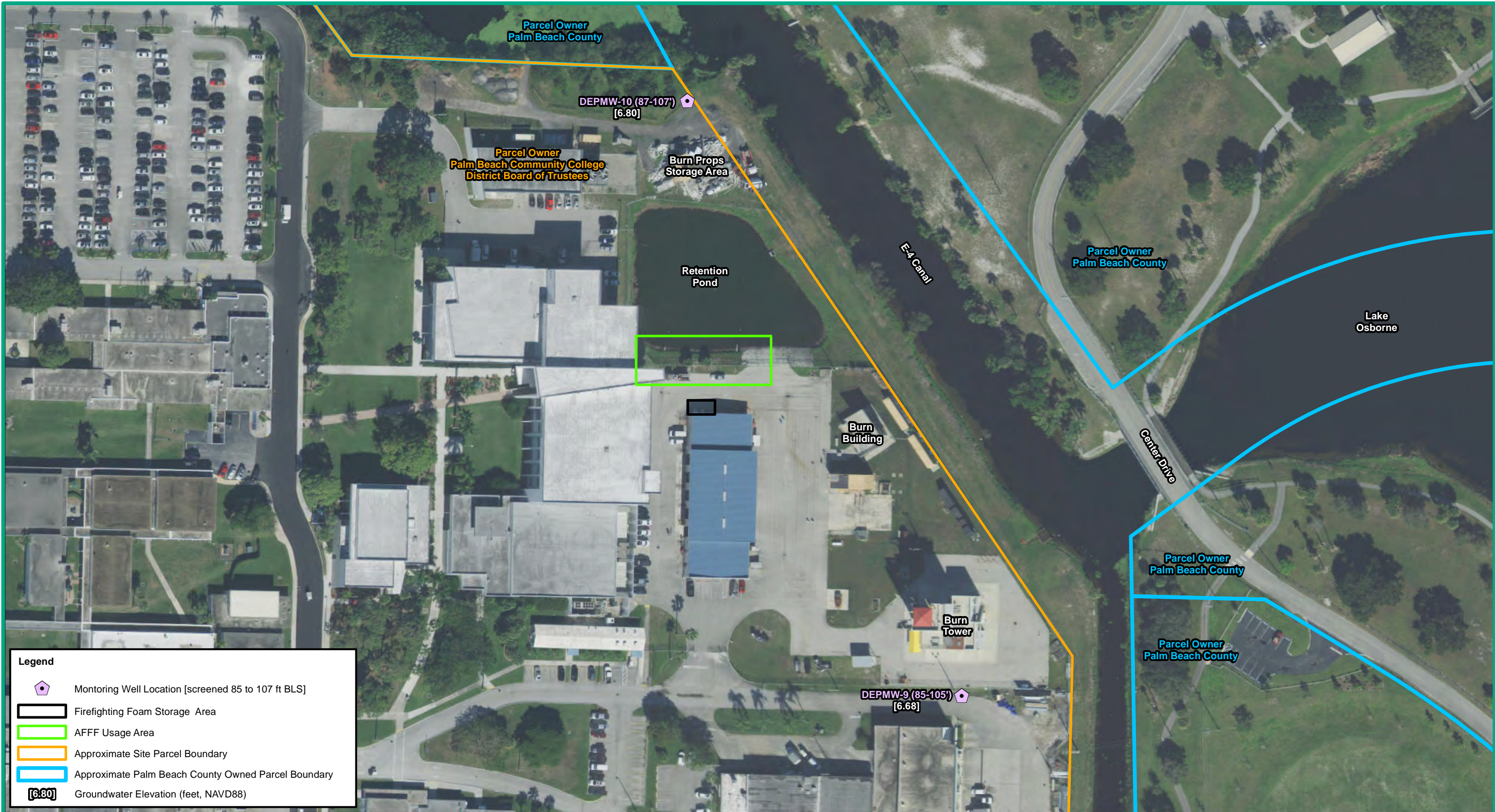
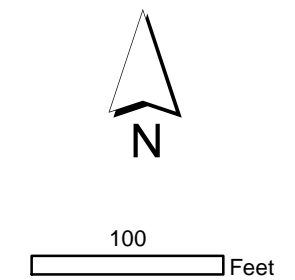


Figure 8
Groundwater Elevation Map from 85 to 107 ft BLS
Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County, Florida

Notes:

1. NAVD88 indicates North American Vertical Datum of 1988.
2. ft BLS indicates feet below land surface.
3. Depth-to-water measurements were collected on 4 March 2020.
4. AFFF indicates aqueous film forming foam.
5. Approximate parcel boundaries downloaded from Palm Beach Property Appraiser (file dated 12 March 2019).
6. Source of 2019 World Imagery: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Date: May 14, 2020



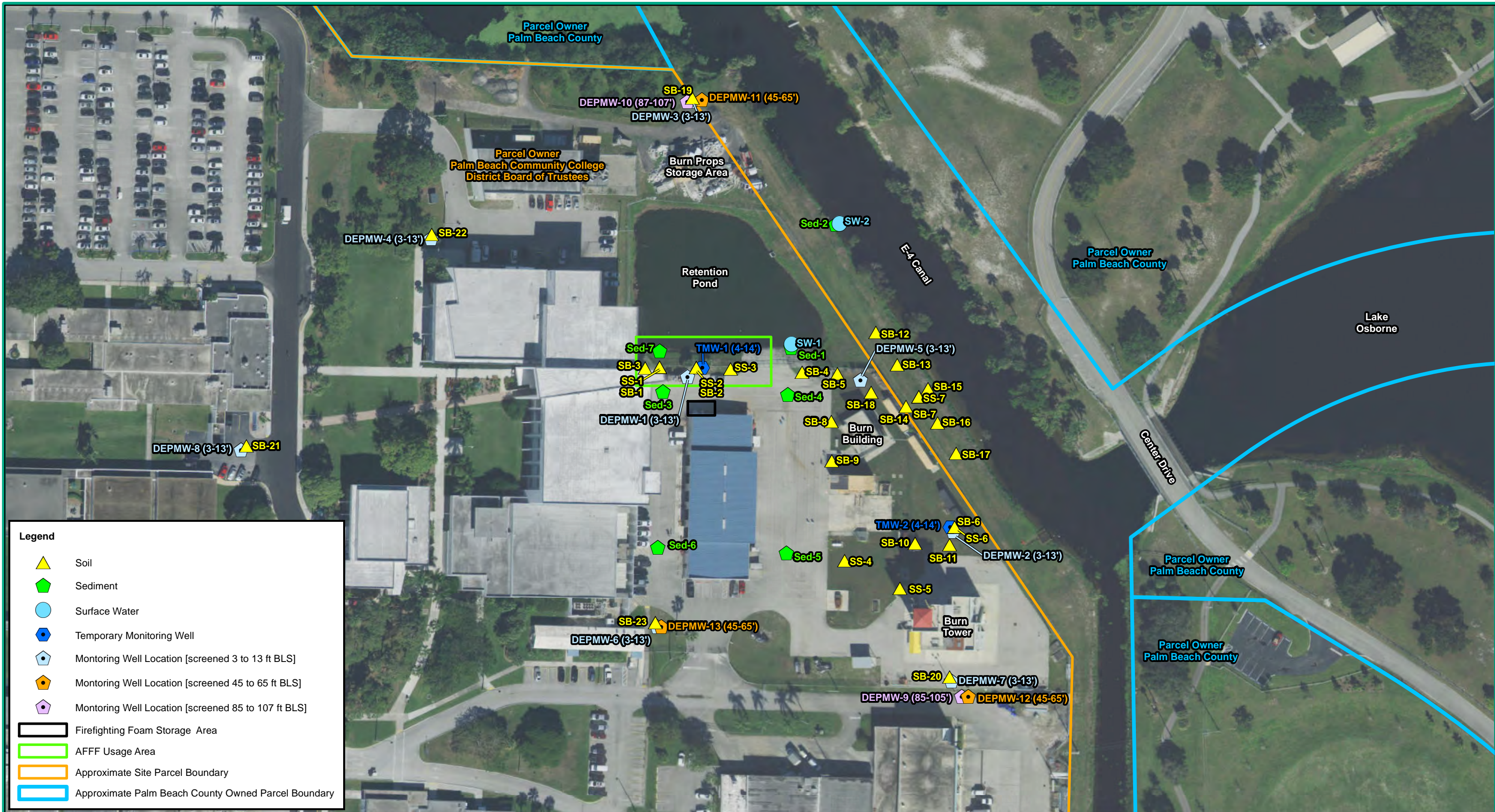
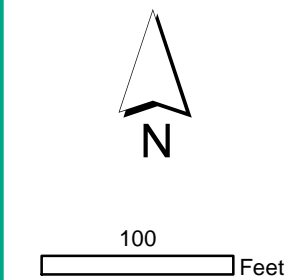


Figure 9
Sampling Locations
Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County, Florida

Notes:

1. AFFF indicates aqueous film forming foam.
2. ft BLS indicates feet below land surface.
3. Approximate parcel boundaries downloaded from Palm Beach Property Appraiser (file dated 12 March 2019).
4. Source of 2019 World Imagery: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Date: May 14, 2020



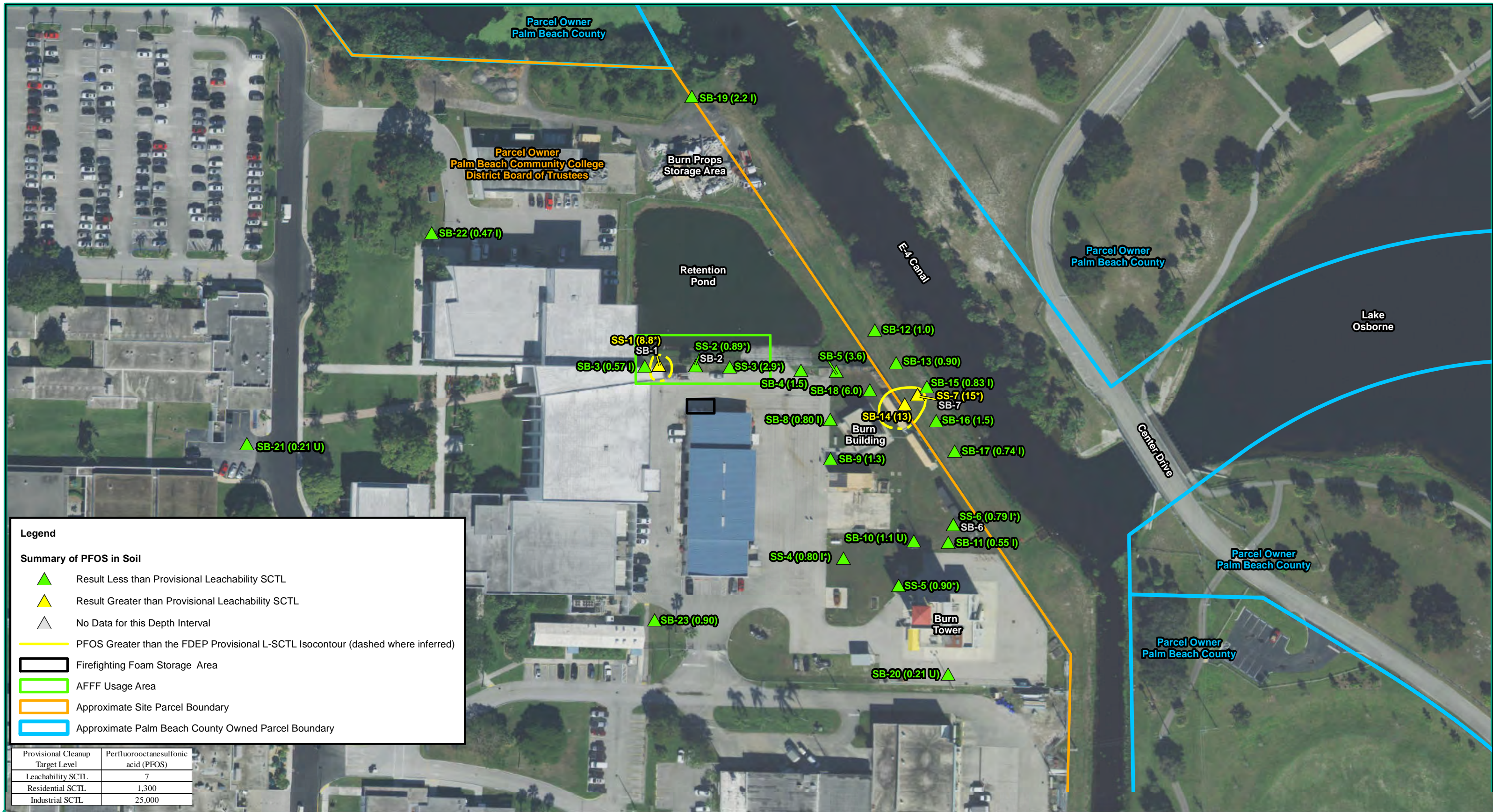
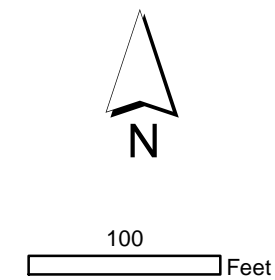


Figure 11
Summary of PFOS in Soil
from 0 to 0.5 ft BLS
Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County, Florida

Notes:

1. Results and screening criteria are presented in micrograms per kilogram ($\mu\text{g}/\text{kg}$).
2. I indicates result is between the laboratory method detection limit (MDL) and the laboratory practical quantitation limit.
3. U indicates material was analyzed for but not detected. The reported value is the MDL for the sample analyzed.
4. * indicates location was collected during 2019 preliminary assessment activities from 0 to 1 feet (ft) below land surface (BLS).
5. SCTL indicates soil cleanup target level.
6. AFFF indicates aqueous film forming foam.
7. Approximate parcel boundaries downloaded from Palm Beach Property Appraiser (file dated 12 March 2019).
8. Source of 2019 World Imagery: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Date: May 14, 2020



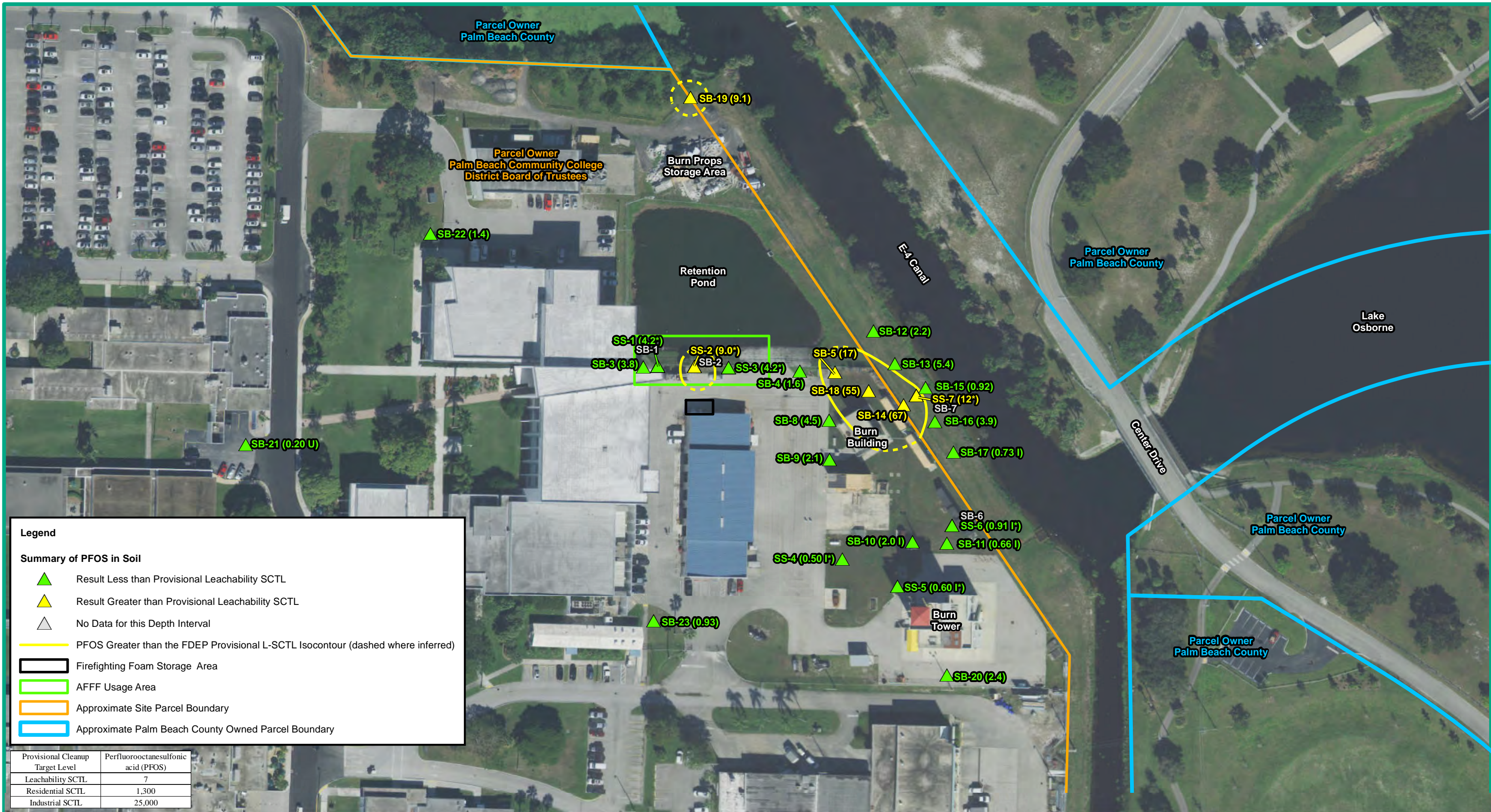


Figure 12
Summary of PFOS in Soil
from 0.5 to 2 ft BLS
Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County, Florida

Notes:

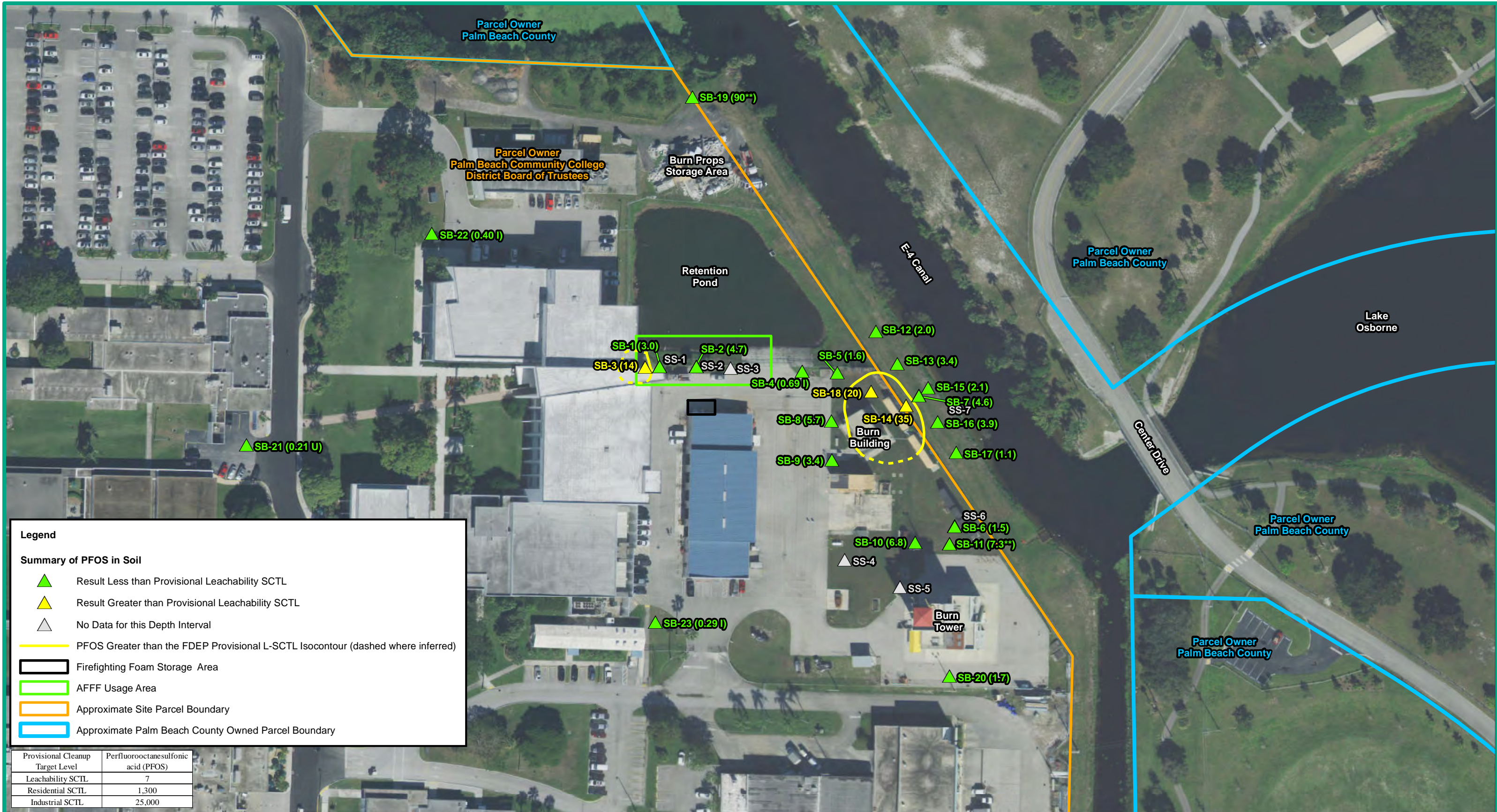
1. Results and screening criteria are presented in micrograms per kilogram ($\mu\text{g}/\text{kg}$).
2. I indicates result is between the laboratory method detection limit (MDL) and the laboratory practical quantitation limit.
3. U indicates material was analyzed for but not detected. The reported value is the MDL for the sample analyzed.
4. * indicates location was collected during 2019 preliminary assessment activities from 1 to 2 feet (ft) below land surface (BLS).
5. SCTL indicates soil cleanup target level.
6. AFFF indicates aqueous film forming foam.
7. Approximate parcel boundaries downloaded from Palm Beach Property Appraiser (file dated 12 March 2019).
8. Source of 2019 World Imagery: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



100
 Feet



Date: May 14, 2020



Legend

Summary of PFOS in Soil

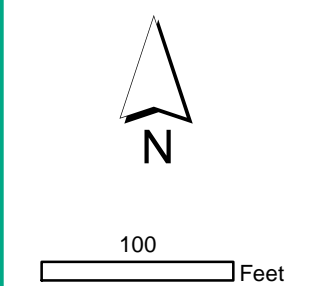
- ▲ Result Less than Provisional Leachability SCTL
- ▲ Result Greater than Provisional Leachability SCTL
- ▲ No Data for this Depth Interval
- PFOS Greater than the FDEP Provisional L-SCTL Isocontour (dashed where inferred)
- Firefighting Foam Storage Area
- AFFF Usage Area
- Approximate Site Parcel Boundary
- Approximate Palm Beach County Owned Parcel Boundary

Provisional Cleanup Target Level	Perfluorooctanesulfonic acid (PFOS)
Leachability SCTL	7
Residential SCTL	1,300
Industrial SCTL	25,000

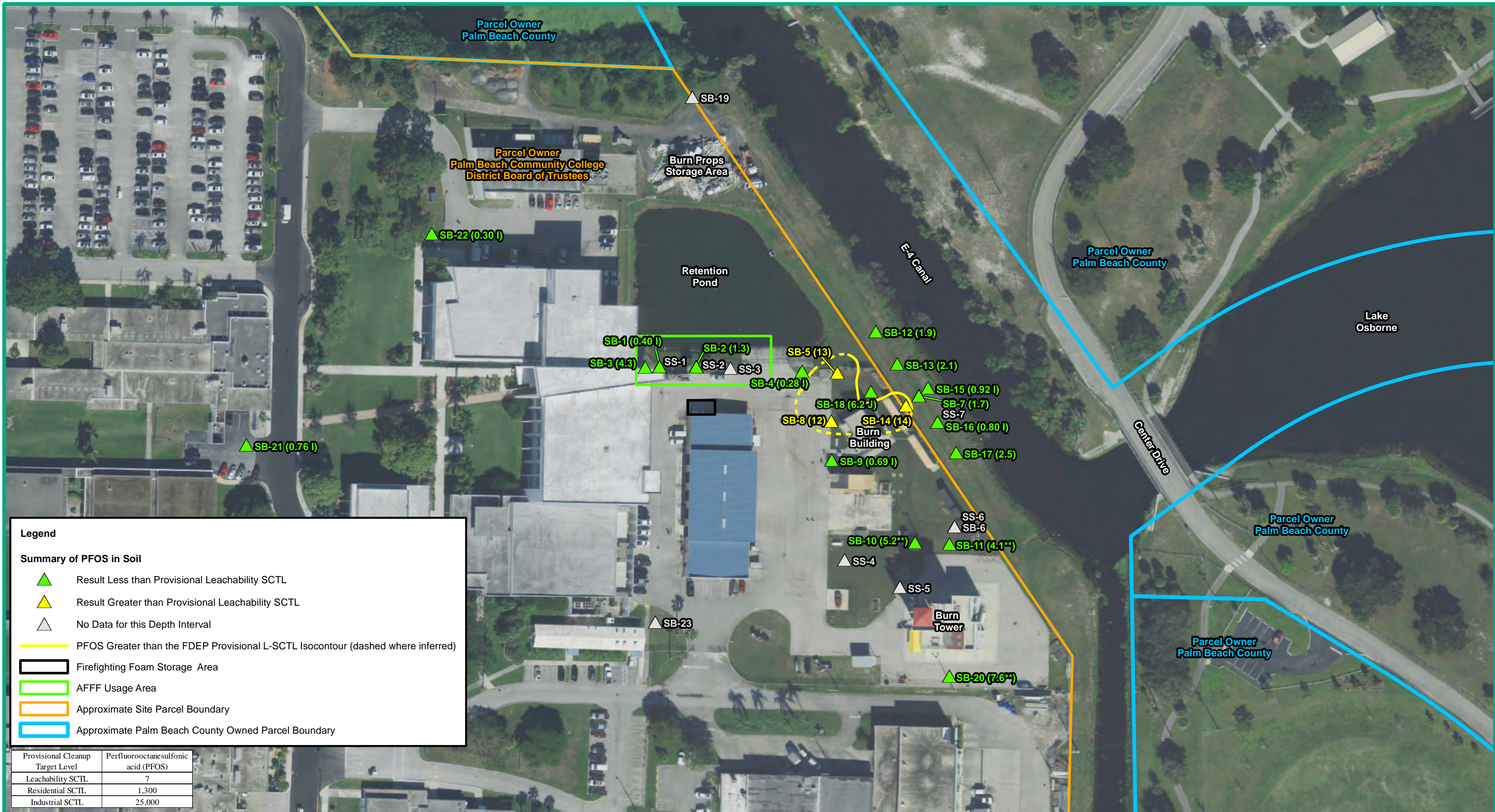
Figure 13
Summary of PFOS in Soil
from 2 to 4 ft BLS
Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County, Florida

Notes:

1. Results and screening criteria are presented in micrograms per kilogram ($\mu\text{g}/\text{kg}$).
2. I indicates result is between the laboratory method detection limit (MDL) and the laboratory practical quantitation limit.
3. U indicates material was analyzed for but not detected. The reported value is the MDL for the sample analyzed.
4. ft BLS indicates feet below land surface.
5. ** saturated soil sample; results not compared to FDEP provisional soil cleanup target level (SCTL). See Table 4 for depth to water measurements collected in monitoring wells.
6. AFFF indicates aqueous film forming foam.
7. Approximate parcel boundaries downloaded from Palm Beach Property Appraiser (file dated 12 March 2019).
8. Source of 2019 World Imagery: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.



Date: May 14, 2020



Legend

Summary of PFOS in Soil

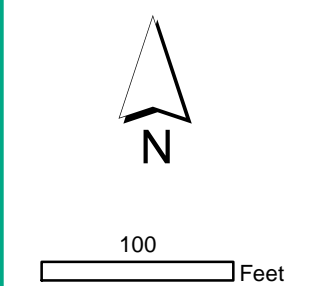
- ▲ Result Less than Provisional Leachability SCTL
- ▲ Result Greater than Provisional Leachability SCTL
- ▲ No Data for this Depth Interval
- PFOS Greater than the FDEP Provisional L-SCTL Isocontour (dashed where inferred)
- Firefighting Foam Storage Area
- AFFF Usage Area
- Approximate Site Parcel Boundary
- Approximate Palm Beach County Owned Parcel Boundary

Provisional Cleanup Target Level	Perfluorooctanesulfonic acid (PFOS)
Leachability SCTL	7
Residential SCTL	1,300
Industrial SCTL	25,000

Figure 14
Summary of PFOS in Soil
from 4 to 5 ft BLS
Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County, Florida

Notes:

1. Results and screening criteria are presented in micograms per kilogram (µg/Kg).
2. I indicates result is between the laboratory method detection limit (MDL) and the laboratory practical quantitation limit.
3. J indicates estimated value and/or the analysis did not meet the quality control criteria.
4. ft BLS indicates feet below land surface.
5. ** saturated soil sample; results not compared to FDEP provisional soil cleanup target level (SCTL). See Table 4 for depth to water measurements collected in monitoring wells.
6. AFFF indicates aqueous film forming foam.
7. Approximate parcel boundaries downloaded from Palm Beach Property Appraiser (file dated 12 March 2019).
8. Source of 2019 World Imagery: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.



Date: May 14, 2020

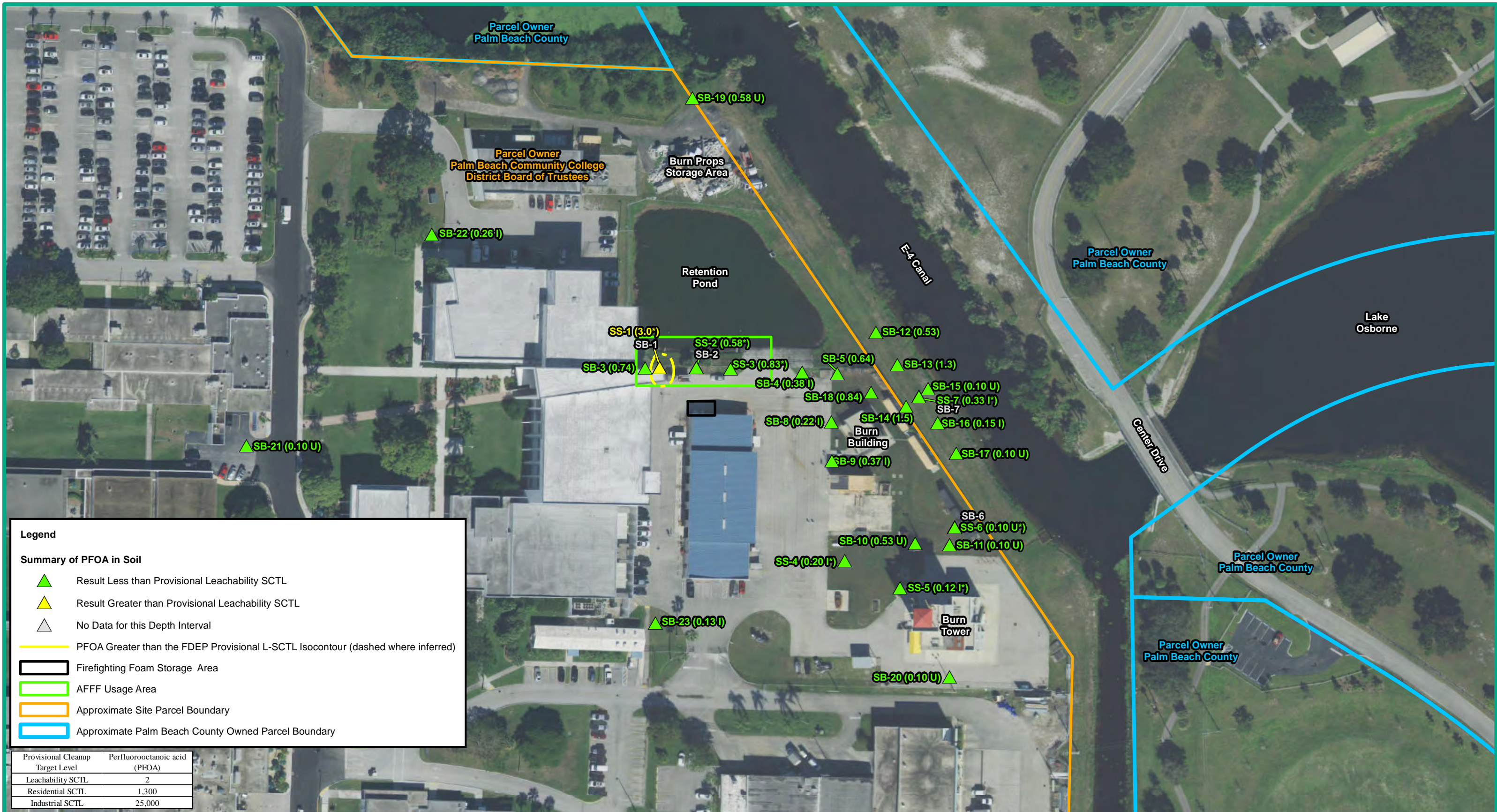


Figure 15
Summary of PFOA in Soil
from 0 to 0.5 ft BLS
Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County, Florida

Notes:

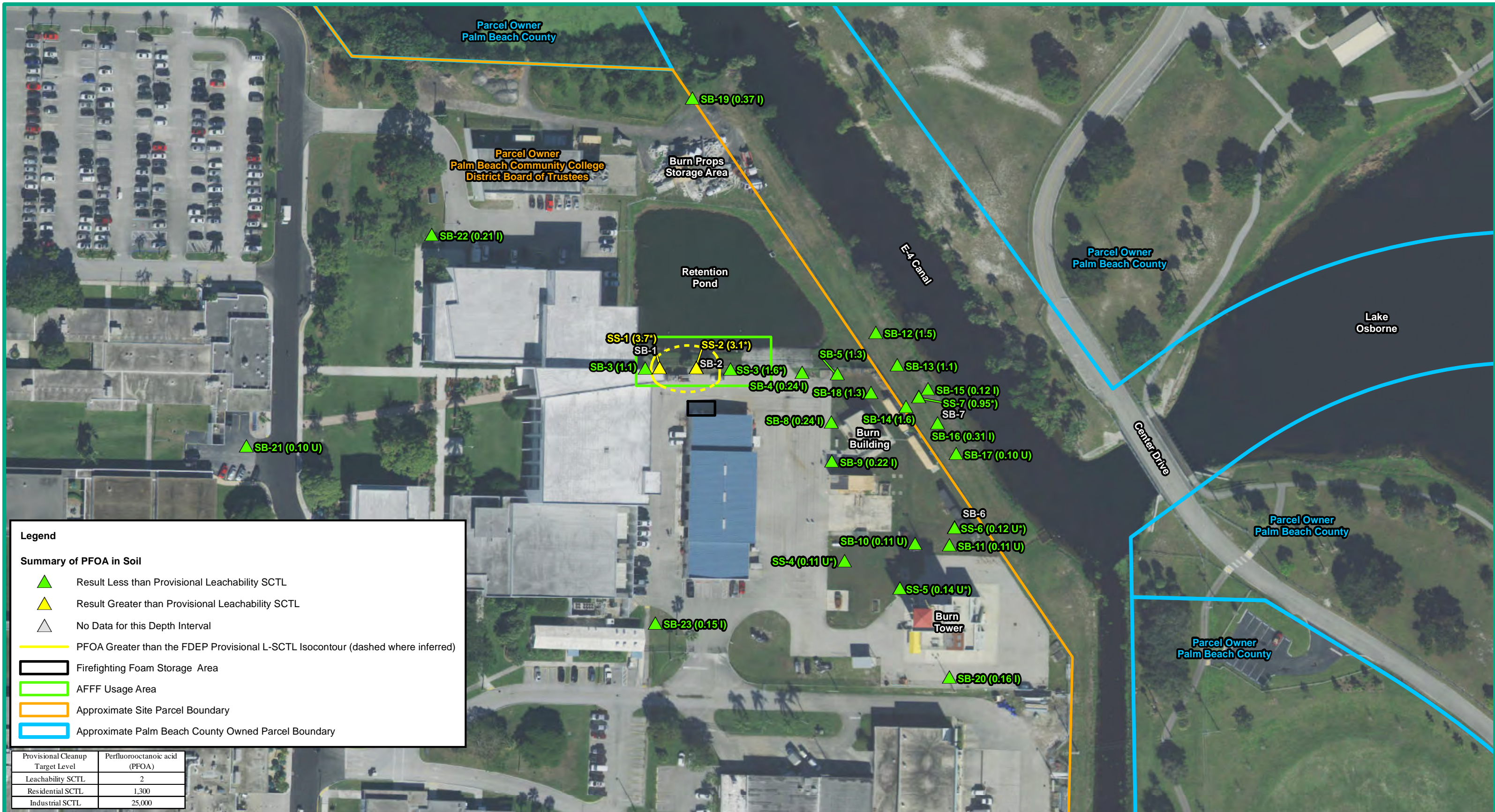
1. Results and screening criteria are presented in micrograms per kilogram ($\mu\text{g}/\text{kg}$).
2. I indicates result is between the laboratory method detection limit (MDL) and the laboratory practical quantitation limit.
3. U indicates material was analyzed for but not detected. The reported value is the MDL for the sample analyzed.
4. * indicates location was collected during 2019 preliminary assessment activities from 0 to 1 feet (ft) below land surface (BLS).
5. SCTL indicates soil cleanup target level.
6. AFFF indicates aqueous film forming foam.
7. Approximate parcel boundaries downloaded from Palm Beach Property Appraiser (file dated 12 March 2019).
8. Source of 2019 World Imagery: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



100
 Feet



Date: May 14, 2020



Legend

Summary of PFOA in Soil

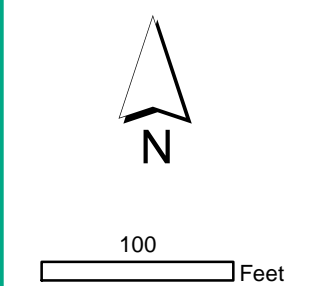
- ▲ Result Less than Provisional Leachability SCTL
- ▲ Result Greater than Provisional Leachability SCTL
- ▲ No Data for this Depth Interval
- PFOA Greater than the FDEP Provisional L-SCTL Isocontour (dashed where inferred)
- Firefighting Foam Storage Area
- AFFF Usage Area
- Approximate Site Parcel Boundary
- Approximate Palm Beach County Owned Parcel Boundary

Provisional Cleanup Target Level	Perfluorooctanoic acid (PFOA)
Leachability SCTL	2
Residential SCTL	1,300
Industrial SCTL	25,000

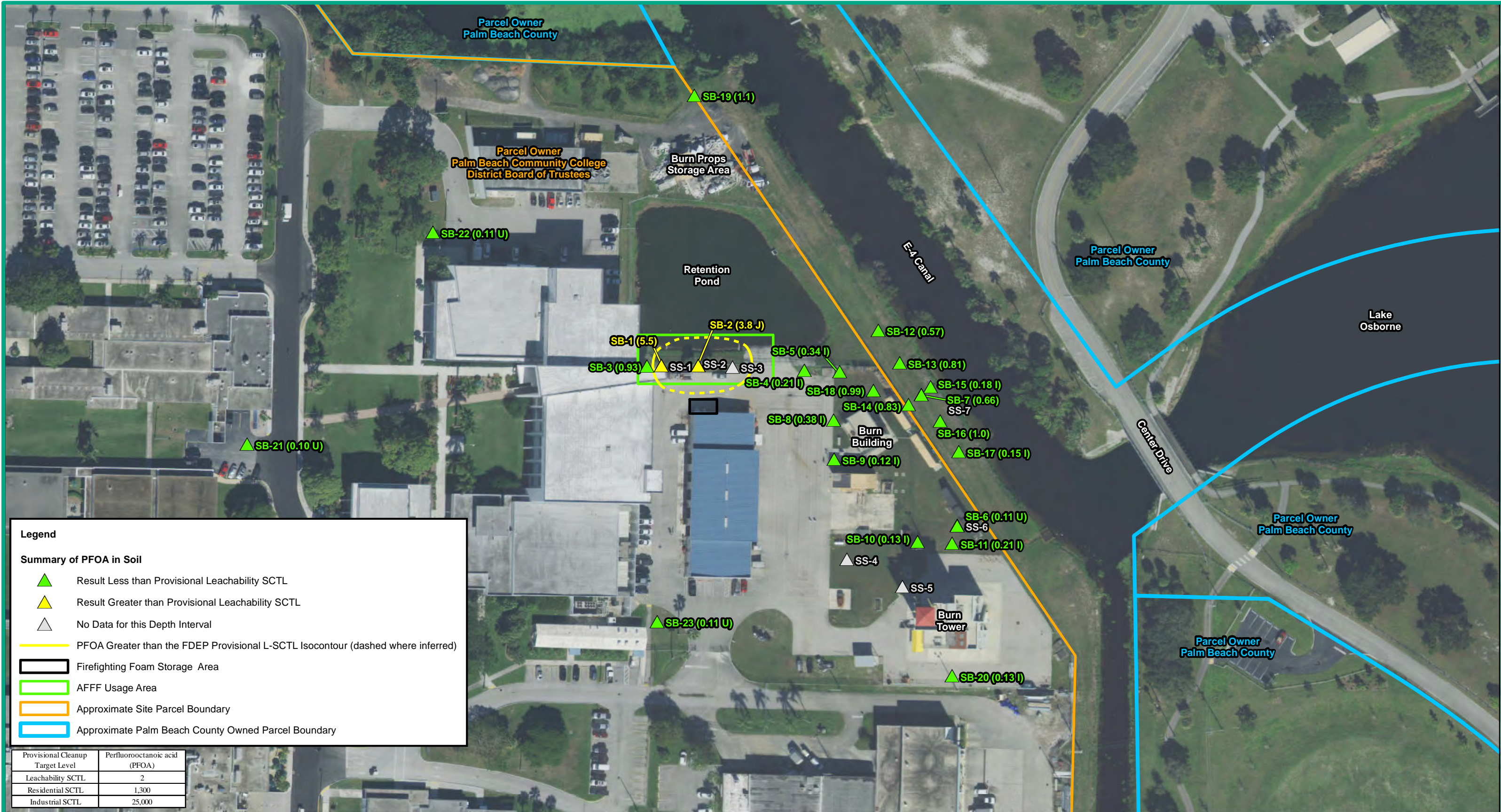
Figure 16
Summary of PFOA in Soil
from 0.5 to 2 ft BLS
Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County, Florida

Notes:

1. Results and screening criteria are presented in micrograms per kilogram ($\mu\text{g}/\text{kg}$).
2. I indicates result is between the laboratory method detection limit (MDL) and the laboratory practical quantitation limit.
3. U indicates material was analyzed for but not detected. The reported value is the MDL for the sample analyzed.
4. * indicates location was collected during 2019 preliminary assessment activities from 1 to 2 feet (ft) below land surface (BLS).
5. SCTL indicates soil cleanup target level.
6. AFFF indicates aqueous film forming foam.
7. Approximate parcel boundaries downloaded from Palm Beach Property Appraiser (file dated 12 March 2019).
8. Source of 2019 World Imagery: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Date: May 14, 2020



Legend

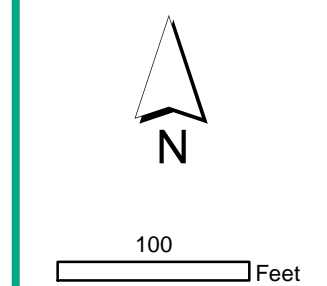
Summary of PFOA in Soil

- ▲ Result Less than Provisional Leachability SCTL
- ▲ Result Greater than Provisional Leachability SCTL
- ▲ No Data for this Depth Interval
- PFOA Greater than the FDEP Provisional L-SCTL Isocontour (dashed where inferred)
- Firefighting Foam Storage Area
- AFFF Usage Area
- Approximate Site Parcel Boundary
- Approximate Palm Beach County Owned Parcel Boundary

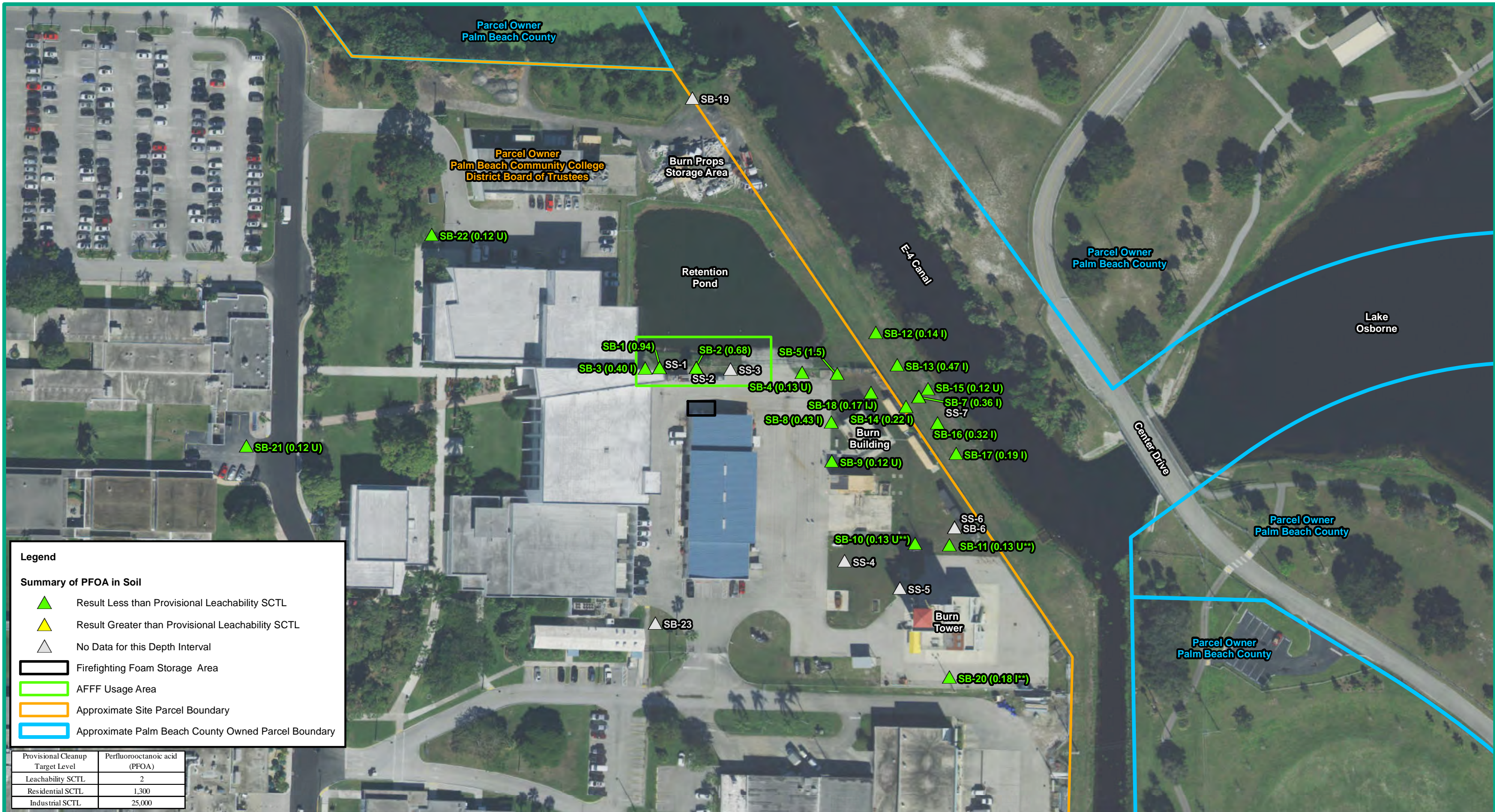
Provisional Cleanup Target Level	Perfluorooctanoic acid (PFOA)
Leachability SCTL	2
Residential SCTL	1,300
Industrial SCTL	25,000

Figure 17
Summary of PFOA in Soil
from 2 to 4 ft BLS
Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County, Florida

- Notes:**
1. Results and screening criteria are presented in micrograms per kilogram ($\mu\text{g}/\text{kg}$).
 2. I indicates result is between the laboratory method detection limit (MDL) and the laboratory practical quantitation limit.
 3. J indicates estimated value and/or the analysis did not meet the quality control criteria.
 4. U indicates material was analyzed for but not detected. The reported value is the MDL for the sample analyzed.
 5. ft BLS indicates feet below land surface.
 6. SCTL indicates soil cleanup target level.
 7. AFFF indicates aqueous film forming foam.
 8. Approximate parcel boundaries downloaded from Palm Beach Property Appraiser (file dated 12 March 2019).
 9. Source of 2019 World Imagery: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.



Date: May 14, 2020



Legend

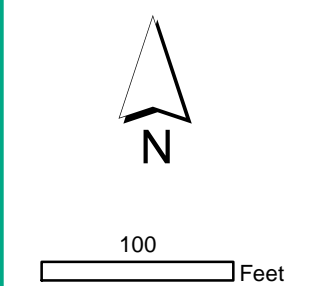
Summary of PFOA in Soil

- ▲ Result Less than Provisional Leachability SCTL
- ▲ Result Greater than Provisional Leachability SCTL
- ▲ No Data for this Depth Interval
- Firefighting Foam Storage Area
- AFFF Usage Area
- Approximate Site Parcel Boundary
- Approximate Palm Beach County Owned Parcel Boundary

Provisional Cleanup Target Level	Perfluorooctanoic acid (PFOA)
Leachability SCTL	2
Residential SCTL	1,300
Industrial SCTL	25,000

Figure 18
Summary of PFOA in Soil
from 4 to 5 ft BLS
Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County, Florida

- Notes:**
1. Results and screening criteria are presented in micograms per kilogram ($\mu\text{g}/\text{Kg}$).
 2. I indicates result is between the laboratory method detection limit (MDL) and the laboratory practical quantitation limit.
 3. J indicates estimated value and/or the analysis did not meet the quality control criteria.
 4. U indicates material was analyzed for but not detected. The reported value is the MDL for the sample analyzed.
 5. ft BLS indicates feet below land surface.
 6. ** saturated soil sample; results not compared to FDEP provisional soil cleanup target level (SCTL). See Table 4 for depth to water measurements collected in monitoring wells.
 7. AFFF indicates aqueous film forming foam.
 8. Approximate parcel boundaries downloaded from Palm Beach Property Appraiser (file dated 12 March 2019).
 9. Source of 2019 World Imagery: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.



Date: May 14, 2020

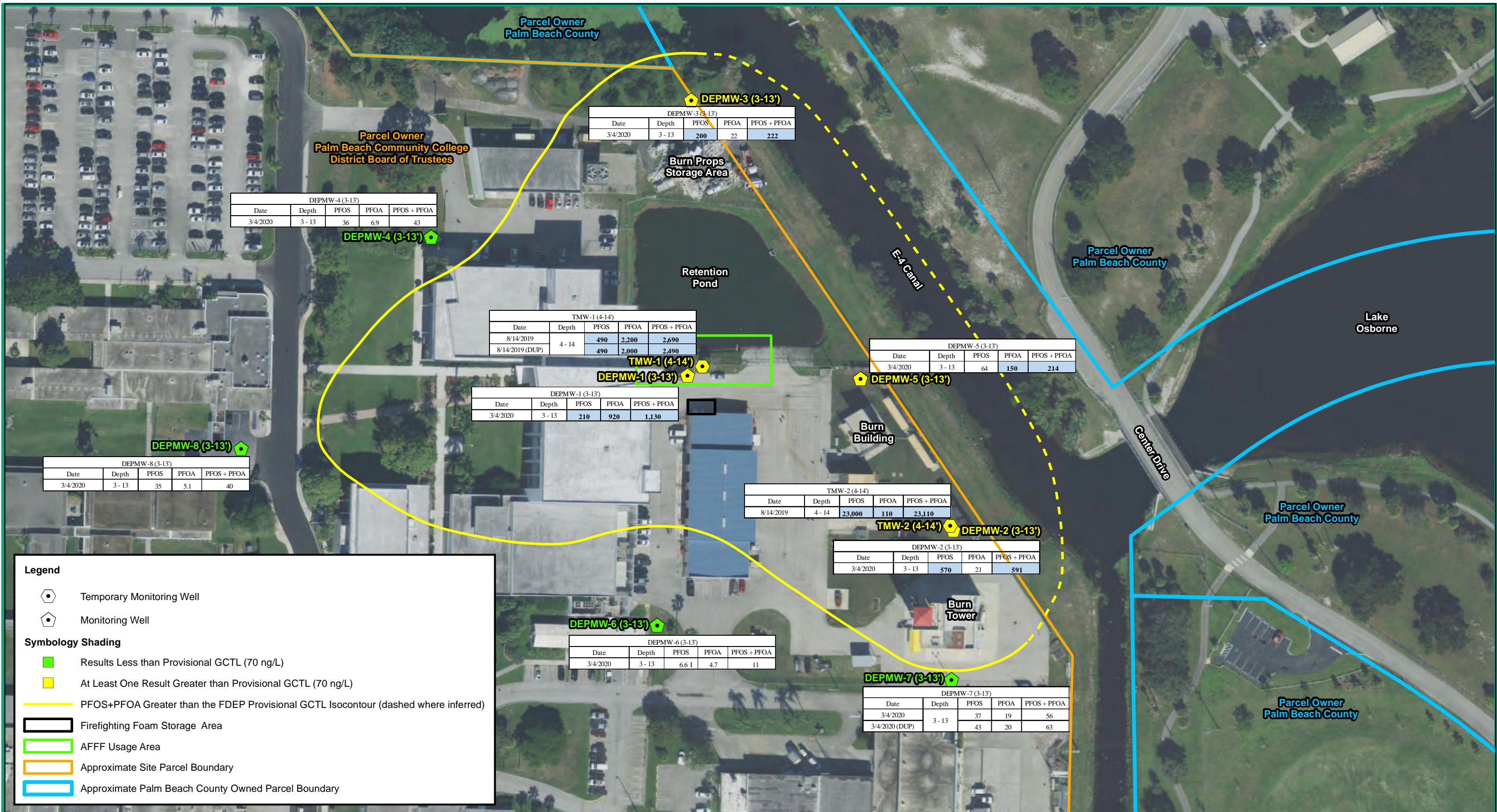
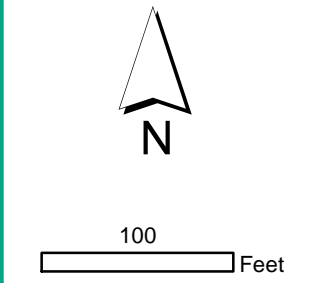


Figure 19
Summary of Analytical Results in Groundwater
from 3 to 14 ft BLS
Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County, Florida

Notes:

- Results are provided in nanograms per liter (ng/L).
- Depth is provided in feet below land surface (ft BLS).
- I indicates result is between the laboratory method detection limit (MDL) and the laboratory practical quantitation limit.
- DUP indicates duplicate sample.
- TMW indicates temporary monitoring well.
- PFOS + PFOA indicates the summation of perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA).
- Blue shaded, bold text indicates an exceedance of the Florida Department of Environmental Protection provisional groundwater cleanup target level (GCTL) of 70 ng/L.
- Contours were generated using the summation concentration of PFOS + PFOA. The higher concentration between a sample and its duplicate was utilized.
- TMW results were not utilized to generate contours.
- AFFF indicates aqueous film forming foam.
- Approximate parcel boundaries downloaded from Palm Beach Property Appraiser (file dated 12 March 2019).
- Source of 2019 World Imagery: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Date: May 14, 2020

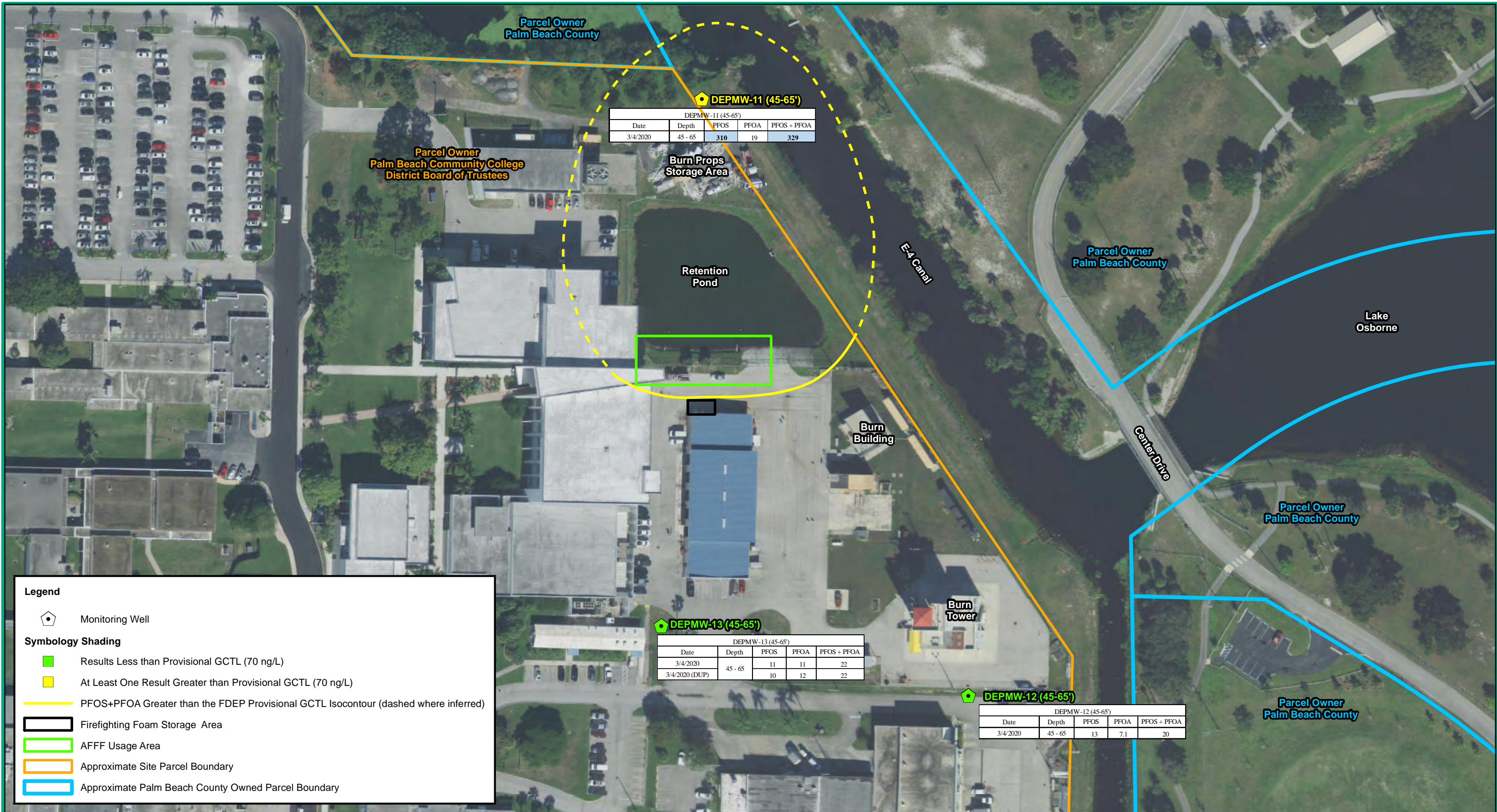


Figure 20
Summary of Analytical Results in Groundwater
from 45 to 65 ft BLS
Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County, Florida

Notes:

1. Results are provided in nanograms per liter (ng/L).
2. Depth is provided in feet below land surface (ft BLS).
3. DUP indicates duplicate sample.
4. PFOS + PFOA indicates the summation of perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA).
5. Blue shaded, bold text indicates an exceedance of the Florida Department of Environmental Protection provisional groundwater cleanup target level (GCTL) of 70 ng/L.
6. Contours were generated using the summation concentration of PFOS + PFOA. The higher concentration between a sample and its duplicate was utilized.
7. AFFF indicates aqueous film forming foam.
8. Approximate parcel boundaries downloaded from Palm Beach Property Appraiser (file dated 12 March 2019).
9. Source of 2019 World Imagery: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



100 Feet



Date: May 14, 2020

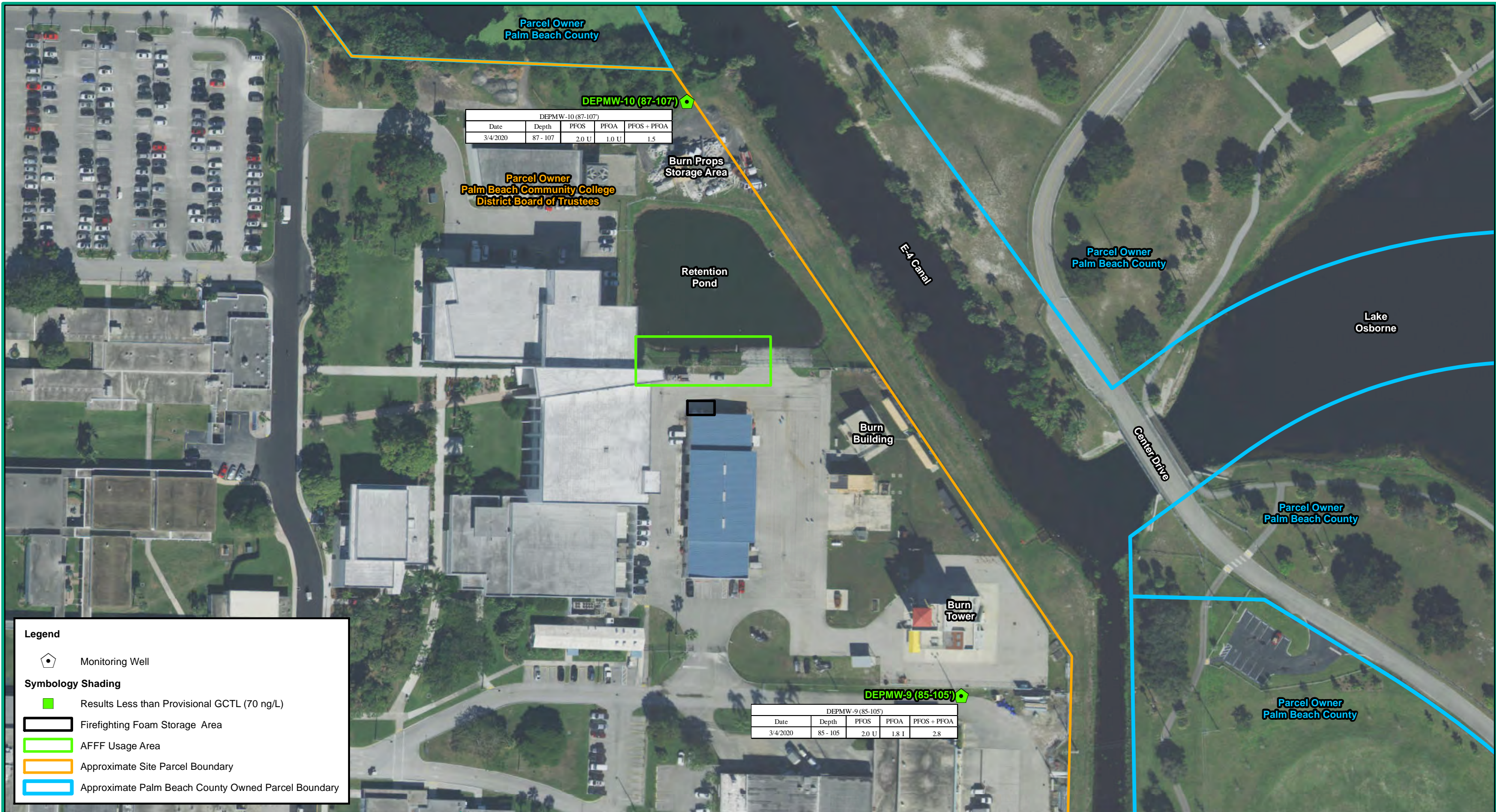
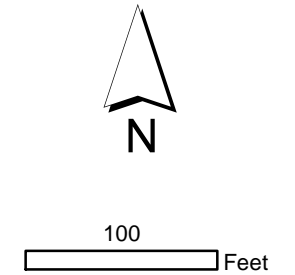


Figure 21
Summary of Analytical Results in Groundwater
from 85 to 107 ft BLS
Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County, Florida

Notes:

1. Results are provided in nanograms per liter (ng/L).
2. Depth is provided in feet below land surface (ft BLS).
3. I indicates result is between the laboratory method detection limit (MDL) and the laboratory practical quantitation limit.
4. U Indicates material was analyzed for but not detected. The reported value is the MDL for the sample analyzed.
5. PFOS + PFOA indicates the summation of perfluorooctanesulfonic acid (PFOS) and perfluorooctanic acid (PFOA).
6. GCTL indicates groundwater cleanup target level.
7. AFFF indicates aqueous film forming foam.
8. Approximate parcel boundaries downloaded from Palm Beach Property Appraiser (file dated 12 March 2019).
9. Source of 2019 World Imagery: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Date: May 14, 2020



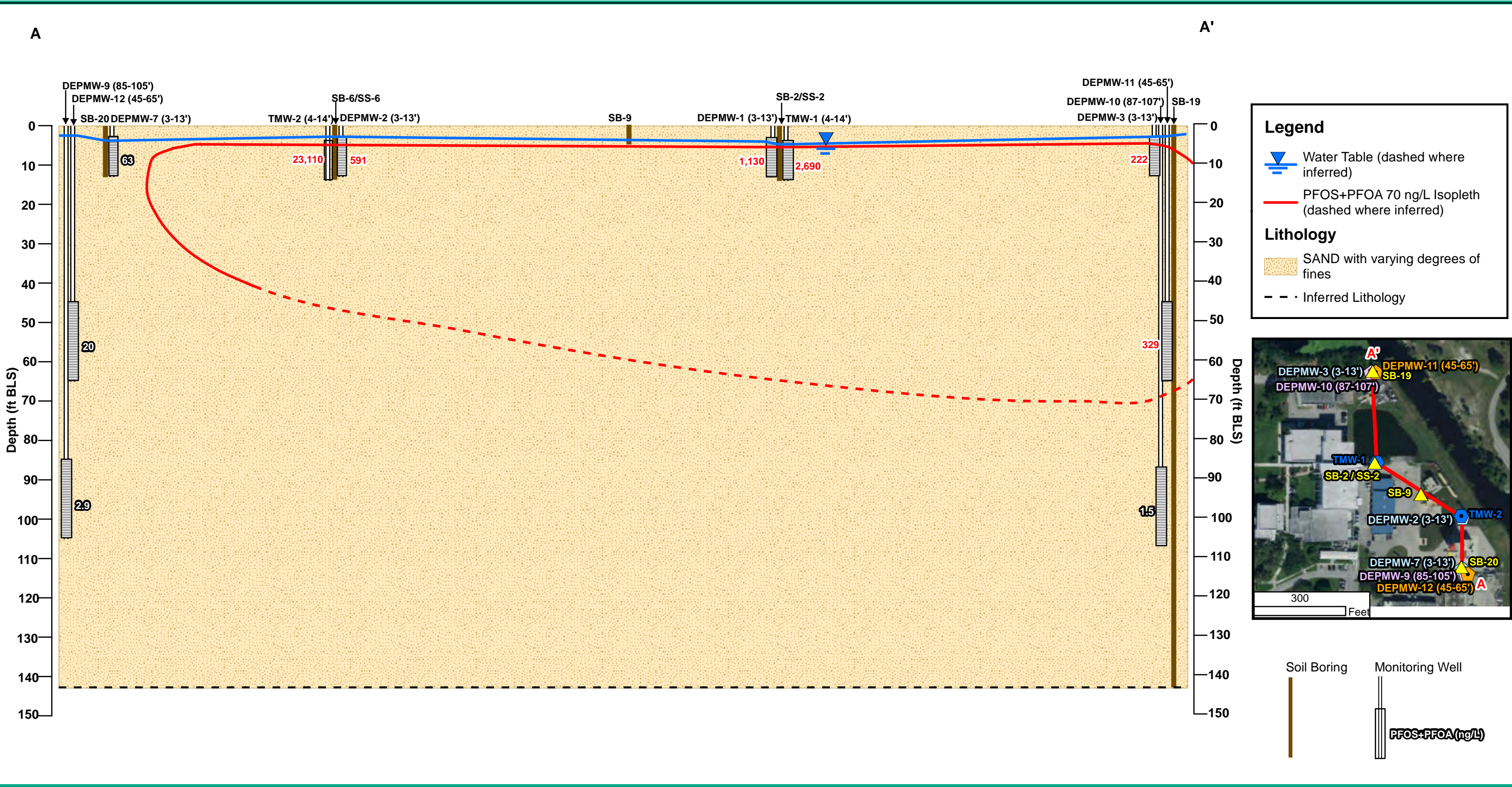
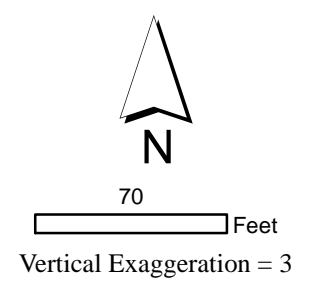
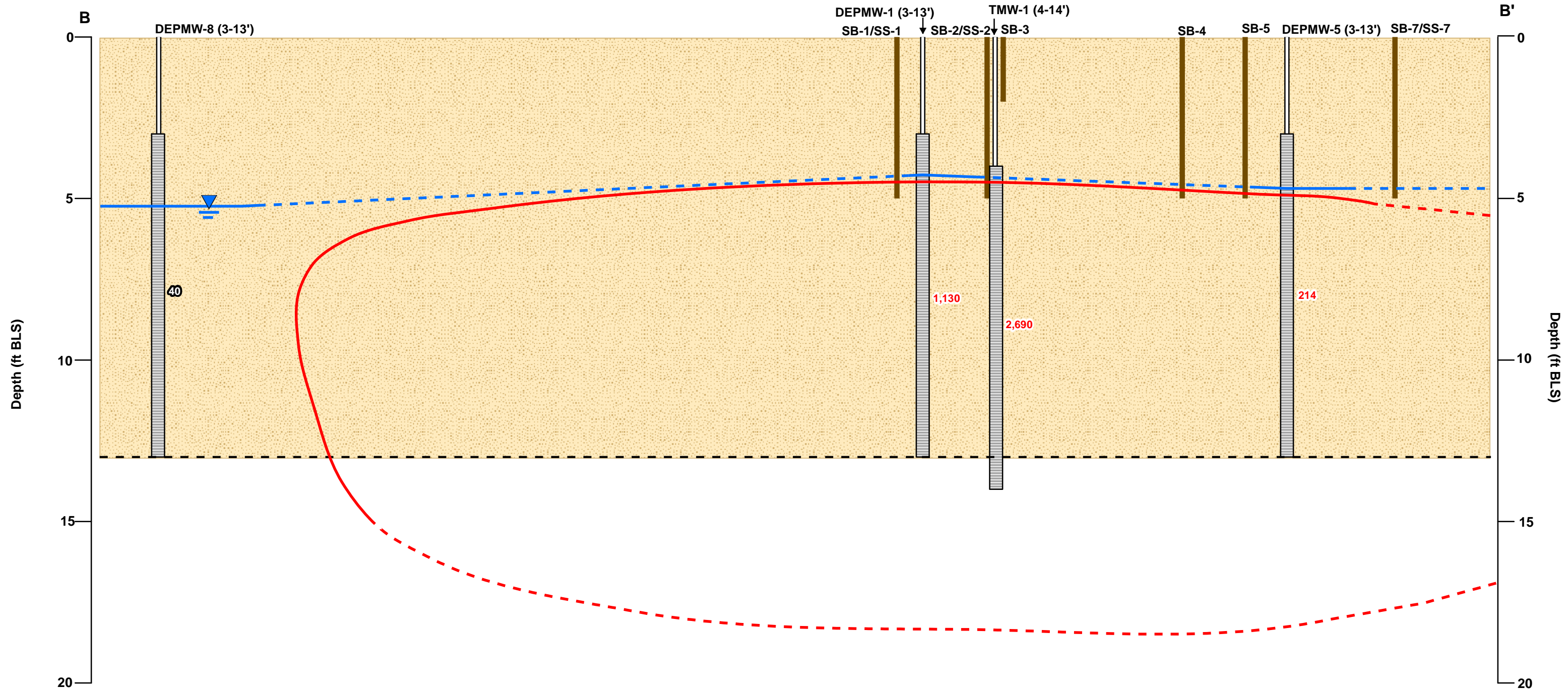


Figure 22
Vertical Extent of PFOS and PFOA in
Groundwater from A-A'
Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County, Florida

- Notes:**
1. ft BLS indicates feet below land surface.
 2. Results are provided in nanograms per liter (ng/L).
 3. Analytical results are shown for the summation of perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA).
 4. The Florida Department of Environmental Protection provisional groundwater cleanup target level (GCTL) for the summation of PFOS and PFOA is 70 ng/L.
 5. Contours were generated using the summation concentration of PFOS + PFOA. The highest concentration between a sample and its duplicate was utilized.
 6. Temporary monitoring well (TMW) results were not utilized to generate contours.
 7. Red text indicates result is greater than the PFOS+PFOA GCTL.
 8. Source of 2018 World Imagery: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.
- Date: May 14, 2020**





Legend

- Water Table (dashed where inferred)
- PFOS+PFOA 70 ng/L Isopleth (dashed where inferred)

Lithology

- SAND with varying degrees of fines
- Inferred Lithology

Soil Boring

Monitoring Well

PFOS+PFOA (ng/L)

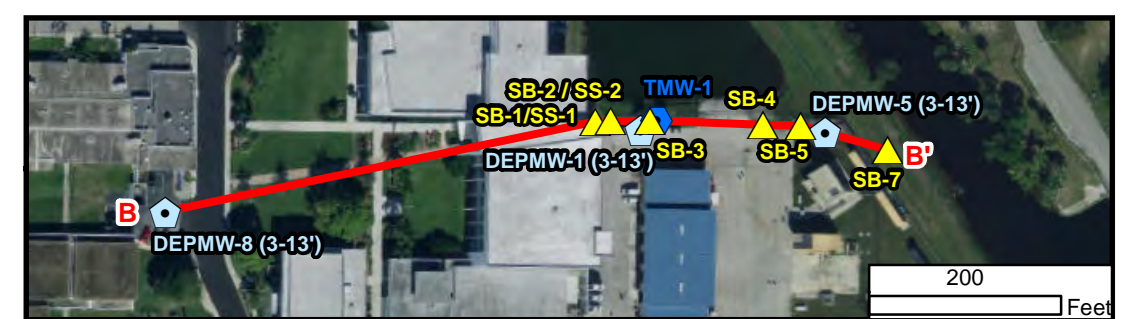


Figure 23
Vertical Extent of PFOS and PFOA in
Groundwater from B-B'
Palm Beach State College
4200 South Congress Avenue
Lake Worth, Palm Beach County, Florida

- Notes:**
1. ft BLS indicates feet below land surface.
 2. Results are provided in nanograms per liter (ng/L).
 3. Analytical results are shown for the summation of perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA).
 4. The Florida Department of Environmental Protection provisional groundwater cleanup target level (GCTL) for the summation of PFOS and PFOA is 70 ng/L.
 5. Contours were generated using the summation concentration of PFOS + PFOA. The highest concentration between a sample and its duplicate was utilized.
 6. Temporary monitoring well (TMW) results were not utilized to generate contours.
 7. Red text indicates result is greater than the PFOS+PFOA GCTL.
 8. Source of 2018 World Imagery: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

60 Feet

Vertical Exaggeration = 20



Date: May 14, 2020

APPENDIX A
University of Florida Letters for Provisional
Cleanup Target Levels

April 16, 2018

Brian Dougherty, PhD
Program Manager
District and Business Support Program
Division of Waste Management
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Development of alternative soil cleanup target levels for PFOA and PFOS

Dear Dr. Dougherty:

At your request, we have developed alternative soil cleanup target levels (ASCTLs) for perfluorooctanoic acid (PFOA; CAS# 335-67-1) and perfluorooctane sulfonate (PFOS; CAS# 1763-23-1). PFOA and PFOS are perfluoroalkyl substances (PFASs). PFASs are used to make products resistant to stains, grease, and water. Before production was phased out at the end of 2015, PFOA was used in carpets, leathers, textiles, upholstery, and as a waterproofing or stain-resistant agent (USEPA, 2016a). In 2002, the only major US manufacturer of PFOS agreed to phase out production. However, PFOA and PFOS degrade slowly and are persistent in the environment. Most contamination by PFOA and PFOS is a result of releases from manufacturing sites, industrial sites, fire training areas, and waste sites where these chemicals were disposed (USEPA, 2016a & 2016b). Derivation of the ASCTLs for each chemical is described below.

Perfluorooctanoic Acid (PFOA)

The United States Environmental Protection Agency (USEPA) summarized toxicity studies for PFOA in the Drinking Water Health Advisory for PFOA (USEPA, 2016a). For reference dose (RfD) development, several candidate studies and health effect endpoints were evaluated (Perkins et al., 2004; Lau et al., 2006; Wolf et al., 2007; White et al., 2009; DeWitt et al., 2008; Butenhoff et al., 2004). A total of six candidate RfDs were considered based upon endpoints including increased liver weight and necrosis in rats, decreased pup weight from gestational exposure in mice, immunosuppression in mice, reduced ossification and accelerated male puberty in offspring of mice, and reduced body weight and increased kidney weight (relative and absolute) in rats. For each animal toxicity study, human equivalent average serum PFOA concentrations were derived using a pharmacokinetic model by Wambaugh et al. (2013). An oral reference dose (RfD) was derived for each human equivalent no observed adverse effect level (NOAEL) or lowest observed adverse effect level (LOAEL) using study-specific uncertainty factors. Three endpoints resulted in a RfD of 2E-05 mg/kg-d (the lowest calculated RfD). Among these, reduced ossification of the proximal phalanges and accelerated puberty in offspring from treated dams in the study by Lau et al. (2006) were selected as the critical

effect(s). Other studies producing the same or similar RfD values are considered supportive. Data were not considered adequate to derive a reference concentration (RfC) for inhalation exposure.

In the Lau et al. (2006) study, pregnant CD-1 mice were dosed with 1, 3, 5, 10, 20, or 40 mg/kg PFOA by oral gavage daily from gestational day 1 to 17. Decreased ossification of pup (both sexes) proximal phalanges and accelerated preputial separation were seen at 1 mg/kg PFOA. The USEPA calculated a human equivalent point of departure of 5.3E-03 mg/kg-d for these endpoints. An uncertainty factor of 300 (3 for extrapolation from animal to human, 10 for extrapolation from LOAEL to NOAEL, and 10 for sensitive individuals) was applied to derive an oral RfD of 2E-05 mg/kg-d. Greater than 95% of PFOA is absorbed by the gastrointestinal tract (ATSDR, 2015). Therefore, a gastrointestinal absorption factor of 1 was used to extrapolate the toxicity to other routes of exposure.

PFOA is also carcinogenic and has been shown to be tumorigenic in the liver, testes, and pancreas of rats. In humans, there is epidemiological evidence for an association between serum PFOA and kidney and testicular tumors (USEPA, 2016a). The USEPA developed an oral cancer slope factor of 7E-02 per mg/kg-d based on the development of testicular tumors in rats. They concluded that the drinking water health advisory based on non-cancer effects was protective for the cancer endpoint. We also calculated ASCTLs based on the oral cancer slope factor of 7E-02 per mg/kg-d (ASCTLs not shown). These ASCTLs were higher than those protective of non-cancer endpoints confirming that ASCTLs based on non-cancer effects are protective of the cancer endpoint.

Direct exposure ASCTLs for residential and commercial/industrial scenarios were calculated using the formula presented in Figure 5 of Chapter 62-777, Florida Administrative Code (F.A.C.). The equation is shown in Figure 1. Default assumptions listed in Table 1 were taken from OSWER Directive 9200.1-120 (USEPA, 2014) and Table 3 of Chapter 62-777, F.A.C. Chemical-specific parameters are presented in Table 2. **The residential ASCTL for PFOA is 1.3 mg/kg and the commercial/industrial ASCTL is 25 mg/kg.** A leachability ASCTL was derived using the formula presented in Figure 8 of Chapter 62-777, FAC. The equation is shown in Figure 2 and inputs are listed in Table 1. **The ASCTL for leachability to groundwater is 0.004 mg/kg** (based on an alternative groundwater cleanup target level of 0.1 µg/L provided to you in a letter dated April 12, 2017).

Perfluorooctane Sulfonate (PFOS)

The USEPA summarized toxicity studies for PFOS in the Drinking Water Health Advisory for PFOS (USEPA, 2016b). Six candidate studies and seven endpoints were identified for the derivation of an RfD for PFOS (Seacat et al., 2002 & 2003; Luebker et al., 2005a & 2005b; Butenhoff et al, 2009; Lau et al., 2003). Candidate endpoints included: 1) increased liver weight and histopathology, decreased body weight, and thyroid hormone disturbances in monkeys; 2) increased liver weight and histopathology, and increased liver enzymes and blood urea nitrogen in serum in male rats; 3) decreased body weight of rat pups; 4) another study showing decreased body weight in rat pups; 5) decreased maternal body weight, gestation length, and pup survival in rats; 6) developmental neurotoxicity in rats; and 7) decreased pup survival and decreased maternal and pup body weight in rats. For each animal toxicity study, human equivalent average serum PFOS concentrations were derived using a pharmacokinetic model by Wambaugh et al. (2013). An oral RfD was derived for each human equivalent NOAEL or LOAEL using study-specific uncertainty factors. Data were not considered adequate to derive a

reference concentration (RfC) for inhalation exposure. The USEPA selected reduced pup weight from a two-generation study in rats as the critical effect. Low body weight was considered to be a marker for developmental effects, including effects that may not be manifested until later in life. This effect is considered relevant to humans because PFOS has been measured in the blood of newborns, in breast milk, and in blood of older children.

The developmental toxicity study by Luebker et al. (2005a) resulted in a RfD of 2E-05 mg/kg-d (the lowest calculated RfD). In this study, male and female rats were dosed with 0, 0.1, 0.4, 1.6, or 3.2 mg/kg-d by gavage from six weeks prior to mating, during mating, and, for females, through gestation and lactation across two generations. Rat pup weight was significantly decreased at 1.6 mg/kg-d PFOS in the F1 generation. The USEPA calculated a human equivalent point of departure of 5.1E-04 mg/kg-d based on decreased rat pup weight in the F1 generation. An uncertainty factor of 30 (3 for extrapolation from animal to human and 10 for sensitive subpopulations) was applied to derive an oral RfD of 2E-05 mg/kg-d. No data are available regarding the gastrointestinal absorption of PFOS. Therefore, a gastrointestinal absorption factor of 1 was used to extrapolate the toxicity to other routes of exposure.

There is also suggestive evidence that PFOS is carcinogenic in humans based on chronic studies in rats that result in liver and thyroid adenomas. However, the tumor data lack a dose-response relationship and could not be used by the USEPA to develop a cancer slope factor. Therefore, the critical effect for PFOS is developmental toxicity.

Direct exposure ASCTLs for residential and commercial/industrial scenarios were calculated using the formula presented in Figure 5 of Chapter 62-777, Florida Administrative Code (F.A.C.). The equation is shown in Figure 1. Default assumptions listed in Table 1 were taken from OSWER Directive 9200.1-120 (USEPA, 2014) and Table 3 of Chapter 62-777, F.A.C. Chemical-specific parameters are presented in Table 2. **The residential ASCTL for PFOS is 1.3 mg/kg and the commercial/industrial ASCTL is 25 mg/kg.** A leachability ASCTL was derived using the formula presented in Figure 8 of Chapter 62-777, FAC. The equation is shown in Figure 2 and inputs are listed in Table 1. **The ASCTL for leachability to groundwater is 0.01 mg/kg** (based on an alternative groundwater cleanup target level of 0.1 µg/L provided to you in a letter dated April 12, 2017).

As with the PFOA and PFOS alternative groundwater cleanup target levels (AGCTLs) provided to you previously, these ASCTLs have been calculated using default equations and exposure assumptions from Chapter 62-777, F.A.C. (the ASCTLs also include updated exposure assumptions from OSWER Directive 9200.1-120). Recently, the USEPA and a number of states have modified their calculation of PFOA and PFOS criteria based upon the critical effects, which are developmental in nature, and/or the availability of serum concentration data for these chemicals. For example, the USEPA Health Advisories for PFOA and PFOS in drinking water are based upon a water consumption rate for a lactating woman to protect the breast fed infant rather than a standard adult drinking water consumption rate. This higher rate of consumption leads to a lower acceptable drinking water concentration (0.07 µg/L rather than 0.1 µg/L calculated with Chapter 62-777 F.A.C. assumptions). New Jersey and Minnesota have both used serum concentration data rather than the USEPA oral reference dose to derive acceptable concentrations of PFOA and PFOS in drinking water that are lower than the USEPA Health Advisories. The Minnesota approach specifically targets serum concentrations in the breast fed infant. Other than a general protection of children when developing SCTLs, Florida has not typically tailored calculation of cleanup target levels (CTLs) to address sensitive life stages when they have been identified. With increased attention to the issue of sensitive life stages in the context of PFOA and PFOS exposure, the Florida Department of Environmental

Protection (FDEP) may want to consider as a general matter when and to what extent sensitive life stages should be addressed in CTL development.

Please let us know if you have any questions regarding the development of these ASCTLs.

Sincerely,



Leah D. Stuchal, Ph.D.



Stephen M. Roberts, Ph.D.

References:

- ATSDR (2015) *Draft Toxicological Profile for Perfluoroalkyls*. U.S. Department of Health And Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, August 2015.
- Butenhoff JL, Kennedy GL, Frame SR, et al. (2004) The reproductive toxicology of ammonium perfluorooctanoate (APFO) in the rat. *Toxicol.* 196: 95-116.
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- USEPA (2014) *Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors, OSWER Directive 9200.1-200*. United States Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.
- USEPA (2016a) *Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA)*. United States Environmental Protection Agency, Office of Water, Washington, DC.
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- White SS, Kato K, Jia L T, et al. (2009) Effects of perfluorooctanoic acid on mouse mammary gland development and differentiation resulting from cross-foster and restricted gestational exposures. *Reproduct. Toxicol.* 27: 289-298.
- Wolf CJ, Fenton SE, Schmid JE, et al. (2007) Developmental toxicity of perfluorooctanoic acid in the CD-1 mouse after cross-foster and restricted gestational exposure. *Toxicol. Sci.* 95: 462-473.

Figure 1 – Equation for Developing Acceptable Soil Cleanup Target Levels for Non-Carcinogens:

$$SCTL = \frac{THI \times BW \times AT}{EF \times ED \times FC \times \left[\left(\frac{1}{RfD_o} \times IR_o \times 10^{-6} kg/mg \times RBA \right) + \left(\frac{1}{RfD_a} \times SA \times AF \times DA \times 10^{-6} kg/mg \right) \right]}$$

Figure 2 – Equation for the Determination of SCTLs Based on Leachability:

$$SCTL (mg/kg) = GCTL(\mu g/L) \times CF(mg/\mu g) \times DF \times \left[K_{oc} \times f_{oc} + \frac{\theta_w + \theta_a \times H'}{\rho_b} \right]$$

Table 1 - Default values for the direct contact and leachability equations

Symbol	Definition (units)	Receptor	Default
BW	Body weight (kg)	child	15
		worker	80
IR _o	Ingestion rate, oral (mg/day)	child	200
		worker	50
EF	Exposure frequency (days/yr)	child	350
		worker	250
ED	Exposure duration (years)	child	6
		worker	25
SA	Surface area exposed (cm ² /day)	child	2373
		worker	3527
AT	Averaging time (days) (non-carcinogens)	child	2190
		worker	9125
AF	Adherence factor (mg/cm ²)	child	0.2
		worker	0.12
IR _i	Inhalation rate (m ³ /day)	child	8.1
		worker	20
DA	Dermal absorption (unitless) (organics)		0.1
PEF	Particulate emission factor (m ³ /kg)		1.24×10 ⁹
TR	Target risk (unitless)		1×10 ⁻⁶
CF	Conversion factor (µg/mg)		1000
DAF	Dilution attenuation factor (unitless)		20
f _{oc}	Fraction organic carbon in soil (g/g)		0.002
Θ _w	Water-filled soil porosity (L _{water} /L _{soil})		0.3
Θ _a	Air-filled soil porosity (L _{air} /L _{soil})		0.13
ρ _β	Dry soil bulk density (g/cm ³)		1.5
ω	Average soil moisture content (g _{water} /g _{soil})		0.2 (20%)
η	Total soil porosity (L _{pore} /L _{soil})		0.43
ρ _σ	Soil particle density (g/cm ³)		2.65
CF	Conversion factor (µg/mg)		1000

Table 2 – Chemical-specific parameters for PFOA and PFOS

Chemical-Specific Variable	PFOA		PFOS	
	Value	Source	Value	Source
RfD _o	2E-05 mg/kg-day	USEPA	2E-05 mg/kg-day	USEPA
RfD _d	2E-05 mg/kg-day	extrapolated	2E-05 mg/kg-day	extrapolated
RfD _i	2E-05 mg/kg-day	extrapolated	2E-05 mg/kg-day	extrapolated
Diffusivity in air	2.3E-02 cm ² /s	calculated	1.7E-02 cm ² /s	calculated
Diffusivity in water	5.8E-06 cm ² /s	calculated	4.2E-06 cm ² /s	calculated
Molecular weight	414.09 g/mol	HSDB	500.13 g/mol	HSDB
Density	1.792 g/cm ³	HSDB	1.25 g/cm ³	Chemicaland21
Henry's Law Constant	Not measurable	EPIWIN	Not measurable	EPIWIN
log K _{ow}	4.81	HSDB	4.49	EPIWIN
K _{oc}	655.1 L/kg	EPIWIN	2562 L/kg	EPIWIN

USEPA – United States Environmental Protection Agency

HSDB – Hazardous Substances Data Bank

EPIWIN – Estimation Programs Interface for Windows v4.1.1

August 16, 2018

Leah J. Smith
District and Business Support Program
Division of Waste Management
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Calculation of an AGCTL for PFOA/PFOS protective of sensitive lifestages

Dear Ms. Smith:

We have developed an alternative groundwater cleanup target level (AGCTL) for perfluorooctanoic acid (PFOA; CAS# 335-67-1) and perfluorooctane sulfonate (PFOS; CAS# 1763-23-1) protective of sensitive lifestages/receptors. We previously developed AGCTLs for PFOA and PFOS in letters to the Florida Department of Environmental Protection (FDEP) dated April 12, 2017. These AGCTLs incorporated updated toxicity values based on the USEPA Drinking Water Health Advisories for PFOA and PFOS (USEPA, 2016a & 2016b) and updated exposure parameters for adults listed in the 2011 Exposure Factors Handbook (USEPA, 2011). At that time, we were requested to use a drinking water ingestion rate applicable to a generic adult receptor, which is the approach used in the development of groundwater cleanup target levels (GCTLs) in Chapter 62-777, F.A.C. The resulting GCTL for both PFOA and PFOS was 0.1 µg/L.

The critical effects for both of these chemicals are developmental effects. For PFOA, the critical effects are decreased ossification of pup (both sexes) proximal phalanges and accelerated preputial separation. For PFOS, the critical effect is decreased pup weight in the F₁ generation. The F₁ generation is the first generation of pups born after parental exposure. Exposure usually takes place while pups are in utero and may last through lactation and weaning. Because the critical effects are development endpoints, adverse effects can result from short-term exposure during critical periods of development. The 90th percentile drinking water ingestion rate for lactating women (0.054 L/kg-d; USEPA, 2011) is used by the USEPA in the development of their drinking water criterion due to the potential increased susceptibility from higher drinking water rates during pregnancy and lactation (USEPA 2016a & 2016b). From a toxicological standpoint, it is more appropriate to use a drinking water ingestion rate applicable to the most sensitive lifestage/receptor in the development of a cleanup target level, than a default drinking water rate for an adult.

At your request, we have calculated AGCTLs for PFOA and PFOS protective of sensitive lifestages based on the 90th percentile drinking water ingestion rate of 0.054 L/kg-d for lactating women. For developmental effects, AGCTLs of 0.07 µg/L were derived for both PFOA and PFOS using the formula in Figure 2 of Chapter 62-777, FAC. The AGCTLs for these two

chemicals are identical because their oral reference doses are also identical (2E-05 mg/kg-d). The calculation and exposure assumptions used are shown in Figure 1 below. Because of the similarity in adverse effects and potency of these chemicals, the USEPA recommends that, where PFOA and PFOS are co-located, the sum of the concentrations of these chemicals should be compared to the drinking water criterion (USEPA, 2016a & 2016b). Therefore, **the sum of PFOA and PFOS concentrations should be compared to the AGCTL of 0.07 µg/L.**

In deriving these AGCTLs, we note that the Agency for Toxic Substances and Disease Registry (ATSDR) has recently released for public comment a draft toxicological profile for perfluoroalkyl chemicals, including PFOA and PFOS. The proposed Minimal Risk Levels for PFOA and PFOS are an order of magnitude lower than their USEPA reference doses, prompting discussion within the scientific and regulatory community whether the USEPA reference doses should be re-visited and perhaps revised downward. We recommend following this discussion closely and making further modifications to the AGCTLs if warranted. Please let us know if you have any questions regarding the development of this AGCTL.

Sincerely,



Leah D. Stuchal, Ph.D.



Stephen M. Roberts, Ph.D.

References:

USEPA (2011) *Exposure Factors Handbook: 2011 Edition*. United States Environmental Protection Agency, National Center for Environmental Assessment, Office of Research and Development, Washington, DC.

USEPA (2016a) *Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA)*. United States Environmental Protection Agency, Office of Water, Washington, DC.

USEPA (2016b) *Drinking Water Health Advisory for Perfluorooctane Sulfonate (PFOS)*. United States Environmental Protection Agency, Office of Water, Washington, DC.

Figure 1 – Equation for the derivation of a GCTL for PFOA and PFOS

$$GCTL (\mu g/L) = \frac{RfD_o \times RSC \times CF}{WC}$$

where:

Parameter	Definition	Value
GCTL	Groundwater cleanup target level (μg/L)	--
RfDo	Reference dose (mg/kg-d)	2E-05
RSC	Relative source contribution	0.2
CF	Conversion factor (μg/mg)	1000
WC	Water consumption (L/kg-d)	0.054

January 3, 2019

Leah J. Smith
District and Business Support Program
Division of Waste Management
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Leachability SCTLs for PFOA and PFOS based on the alternative GCTL of 0.07 µg/L

Dear Ms. Smith:

At your request, we have calculated leachability soil cleanup target levels (SCTLs) for perfluorooctanoic acid (PFOA; CAS# 335-67-1) and perfluorooctane sulfonate (PFOS; CAS# 1763-23-1) based on the alternative groundwater cleanup target level (AGCTL) of 0.07 µg/L for the protection of sensitive lifestages. The leachability SCTLs were calculated using the equation in Figure 5 of Chapter 62-777, F.A.C. Chemical-specific properties used in the calculation were taken from our letter regarding the calculation of SCTLs for PFOA and PFOS (dated April 16, 2018). Based on these parameters, **the leachability SCTL for PFOA is 0.002 mg/kg and the leachability SCTL for PFOS is 0.007 mg/kg**. Please let us know if you have any questions regarding these calculations.

Sincerely,



Leah D. Stuchal, Ph.D.

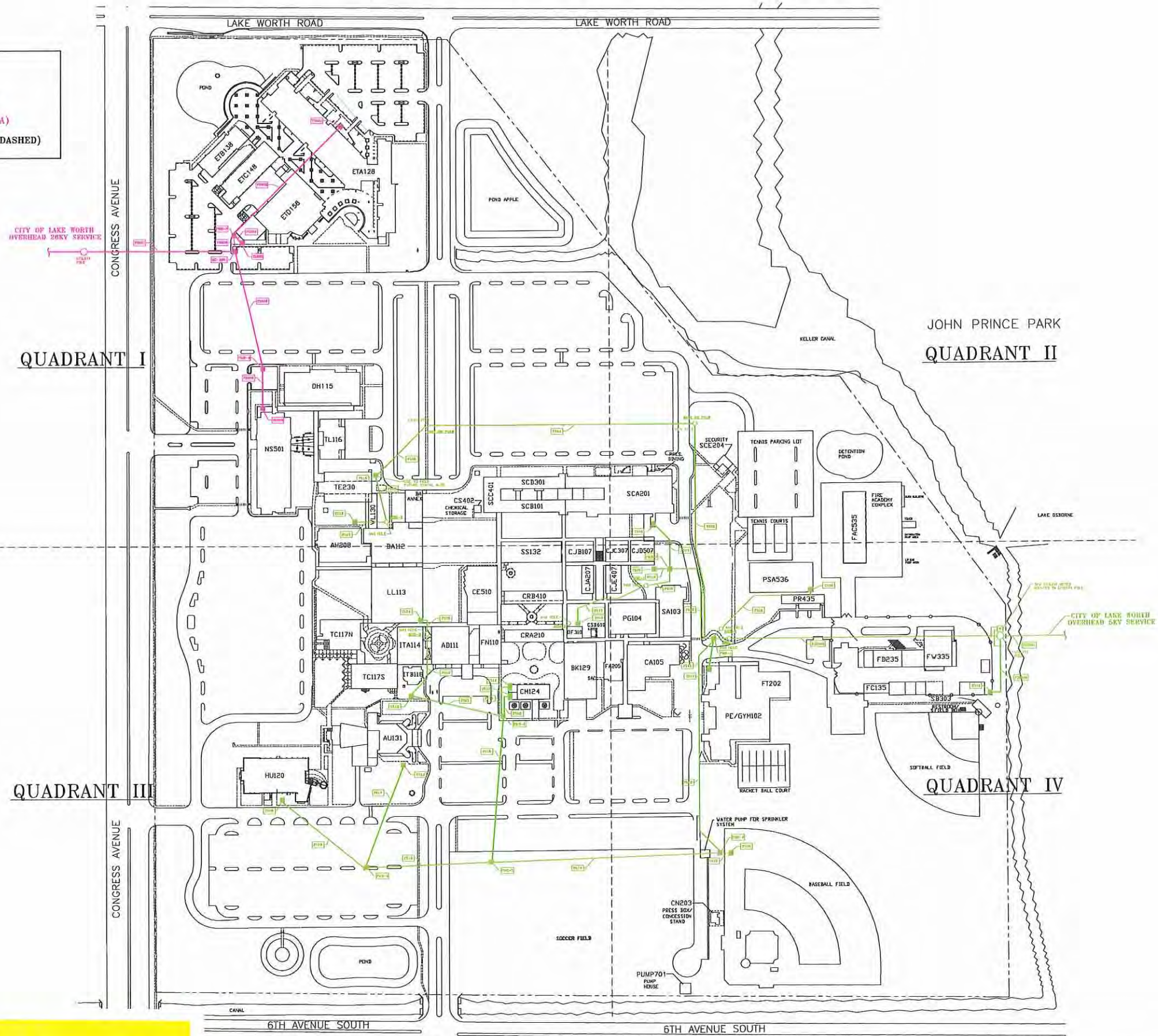


Stephen M. Roberts, Ph.D.

APPENDIX B
Utility As-Builts

KEY:

- EXIST 5KV (GREEN)
- EXIST 26KV (MAGENTA)
- - - MATCH LINE (BLACK DASHED)



REV.	

CHRIS FRYBERG CONSULTING, INC.
 10333 NW 47th Court
 Coral Springs, FL 33076
 Phone: 954.669.1106
 Ft. 4328 CA 2015



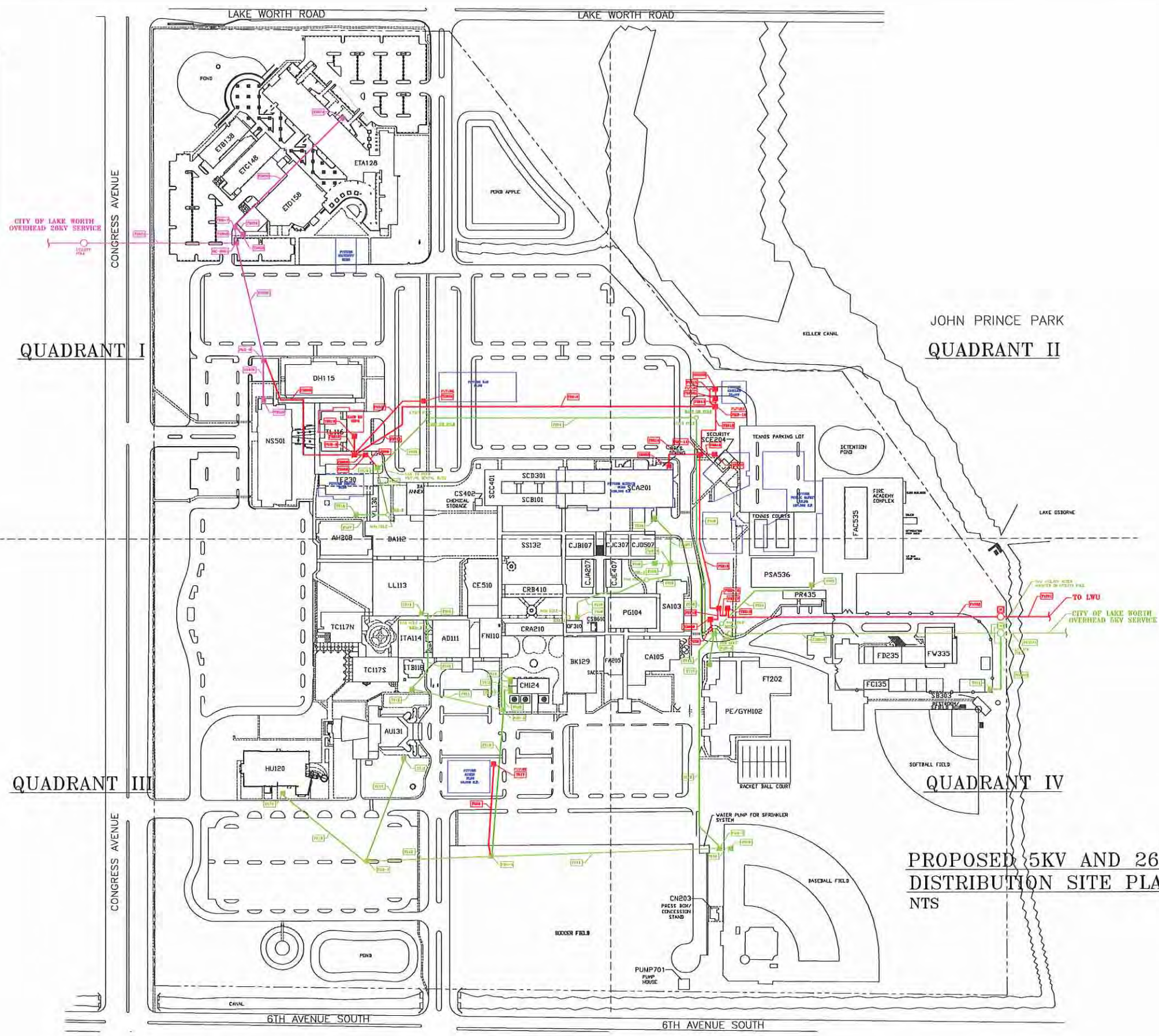
SCALE

**PALM BEACH STATE COLLEGE
 ELECTRICAL DISTRIBUTION MASTER PLAN
 FOR LAKE WORTH CAMPUS
 LAKE WORTH, FLORIDA**

DRAWN	DC
CHECKED	CF
DATE	05-05-10
SCALE	AS NOTED
JOB. NO.	
SHEET	E-1
OF	SHEETS

Scanned: 4-3-2018, by SHB
 01-PBSC-LakeWorth\01-SITE-LW
 04-Archives\01-0000-MELEC-2010-ELECTRICAL Dist

- KEY:**
- EXIST 5KV (GREEN)
 - EXIST 26KV (MAGENTA)
 - FUTURE ELECTRIC (RED)
 - EXISTING BUILDING (BLACK)
 - FUTURE BUILDING (BLUE)
 - - - MATCH LINE (BLACK DASHED)



**PROPOSED 5KV AND 26KV
DISTRIBUTION SITE PLAN
NTS**

BY:	
DATE:	
REVISION:	

CHRIS FREYER CONSULTING, INC.
 10000 N.W. 11th Street, Suite 100
 Coral Springs, FL 33076
 Phone: 954-442-3108
 Fax: 954-442-3108



SCALE:	
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**PALM BEACH STATE COLLEGE
ELECTRICAL DISTRIBUTION MASTER PLAN
FOR LAKE WORTH CAMPUS
LAKE WORTH, FLORIDA**

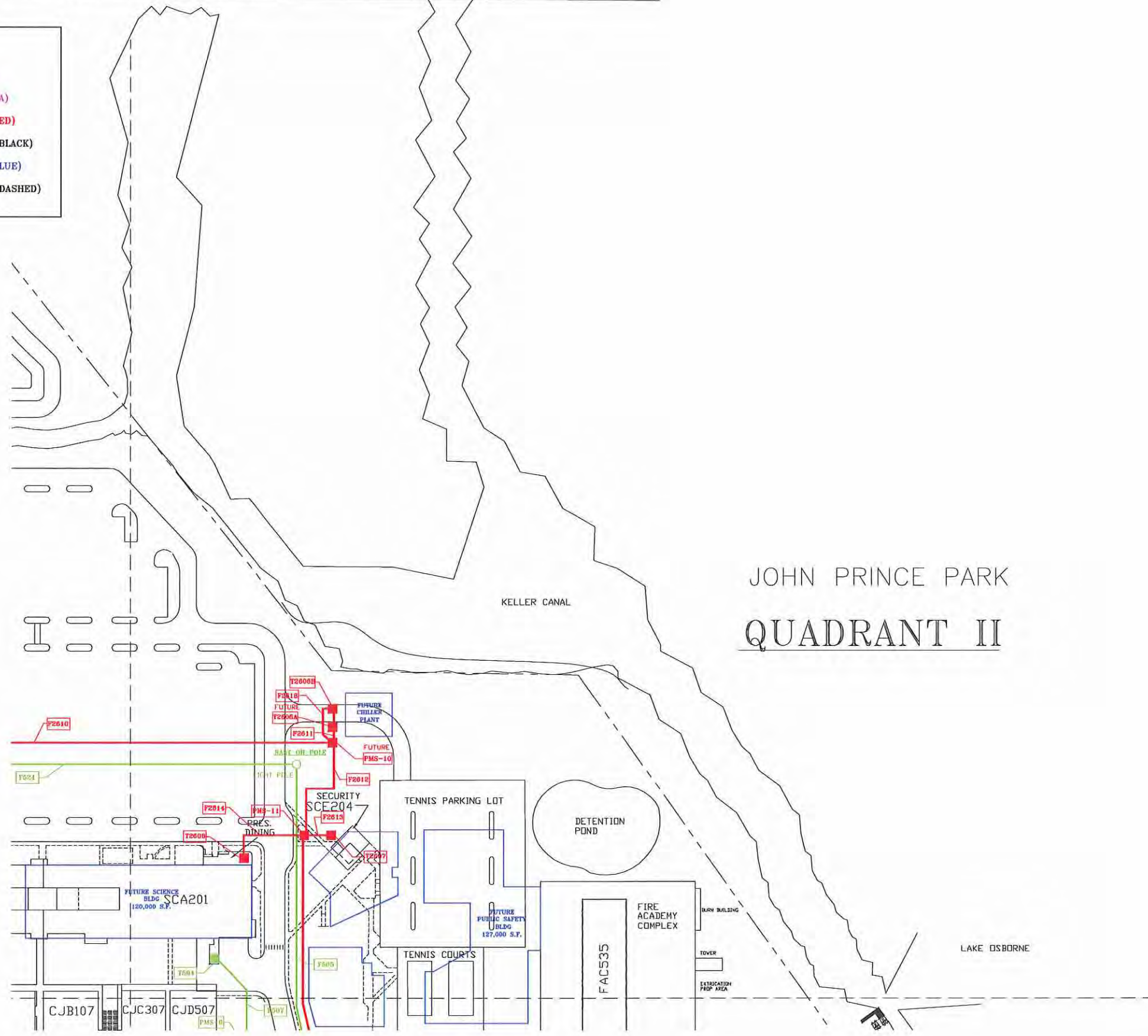
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SCALE:	AS NOTED
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SHEET:	

E-3

LAKE WORTH ROAD

KEY:

- EXIST 5KV (GREEN)
- EXIST 26KV (MAGENTA)
- FUTURE ELECTRIC (RED)
- EXISTING BUILDING (BLACK)
- FUTURE BUILDING (BLUE)
- - - MATCH LINE (BLACK DASHED)



JOHN PRINCE PARK QUADRANT II

BY:	
DATE:	
REVISION:	

CHRIS FRAYNE CONSULTING, INC.
 1000 W. UNIVERSITY BLVD., SUITE 200
 GAITHERSBURG, MD 20878
 Phone: 301-941-1100
 Fax: 301-941-1101

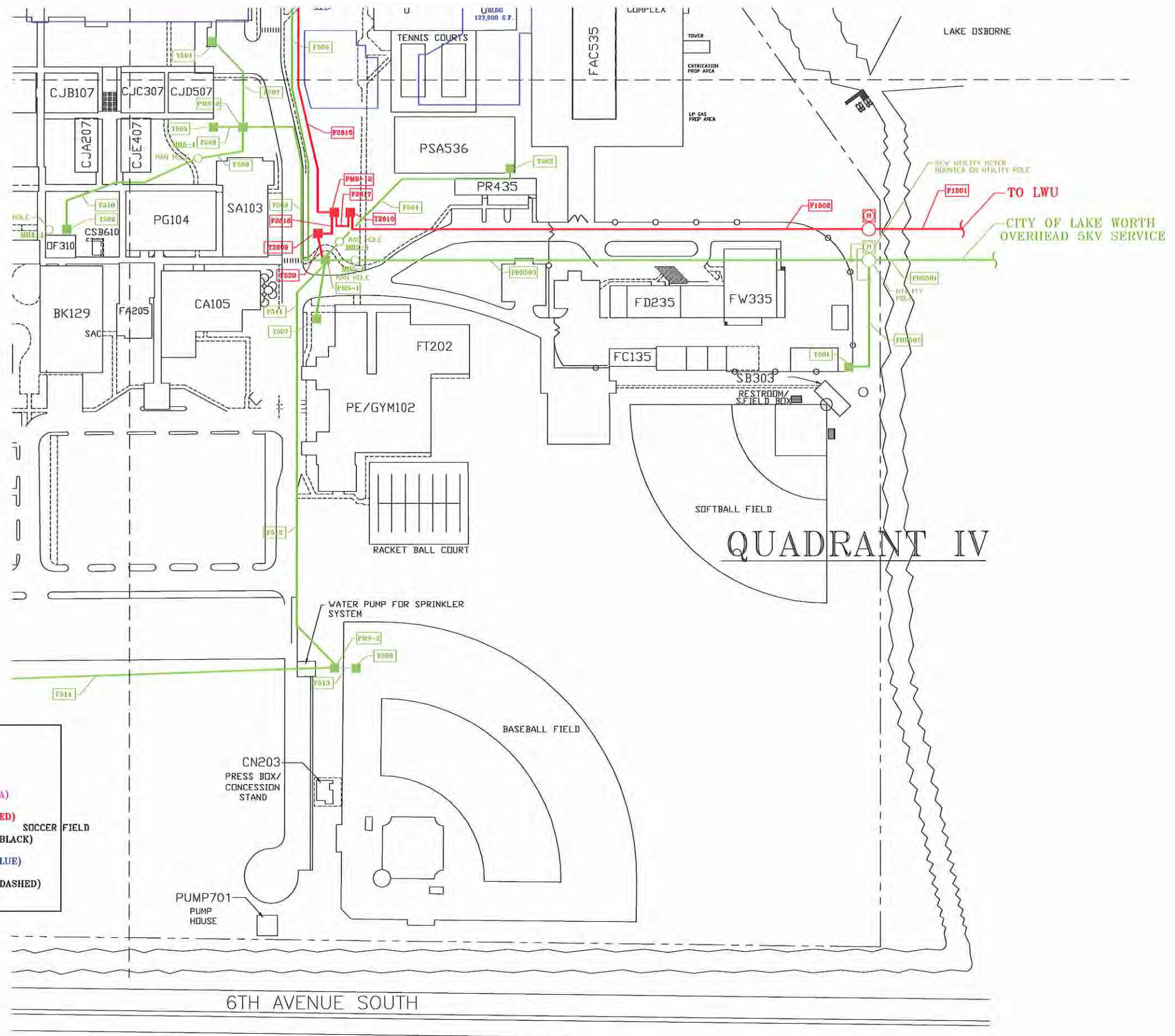


SCALE

**PALM BEACH STATE COLLEGE
 ELECTRICAL DISTRIBUTION MASTER PLAN
 FOR: LAKE WORTH CAMPUS
 LAKE WORTH, FLORIDA**

DRAWN	DC
CHECKED	CF
DATE	05-05-10
SCALE	AS NOTED
JOB NO.	
SHEET	E-5

OF SHEETS



KEY:

- EXIST 5KV (GREEN)
- EXIST 26KV (MAGENTA)
- FUTURE ELECTRIC (RED)
- EXISTING BUILDING (BLACK)
- FUTURE BUILDING (BLUE)
- MATCH LINE (BLACK DASHED)

BY:	
REVISION:	

CHRIS FREYER CONSULTING, INC.
 1001 S. W. 11th St., Suite 100
 Ft. Lauderdale, FL 33304
 Phone: 954-443-3108
 Fax: 954-443-3108
 CA 28135



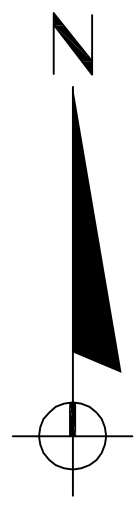
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**PALM BEACH STATE COLLEGE
 ELECTRICAL DISTRIBUTION MASTER PLAN
 FOR LAKE WORTH CAMPUS
 LAKE WORTH, FLORIDA**

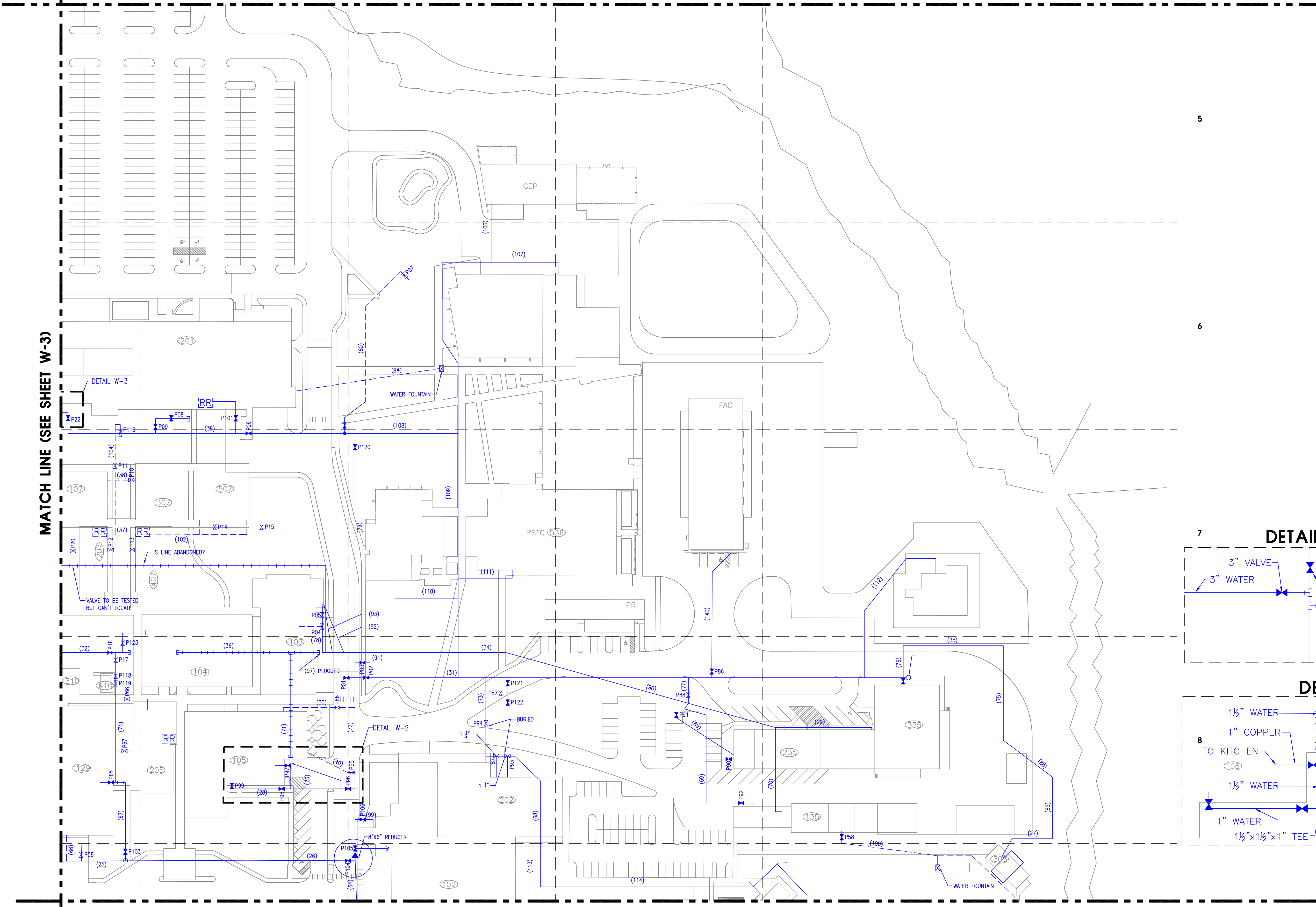
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SHEET	E-7

OF SHEETS

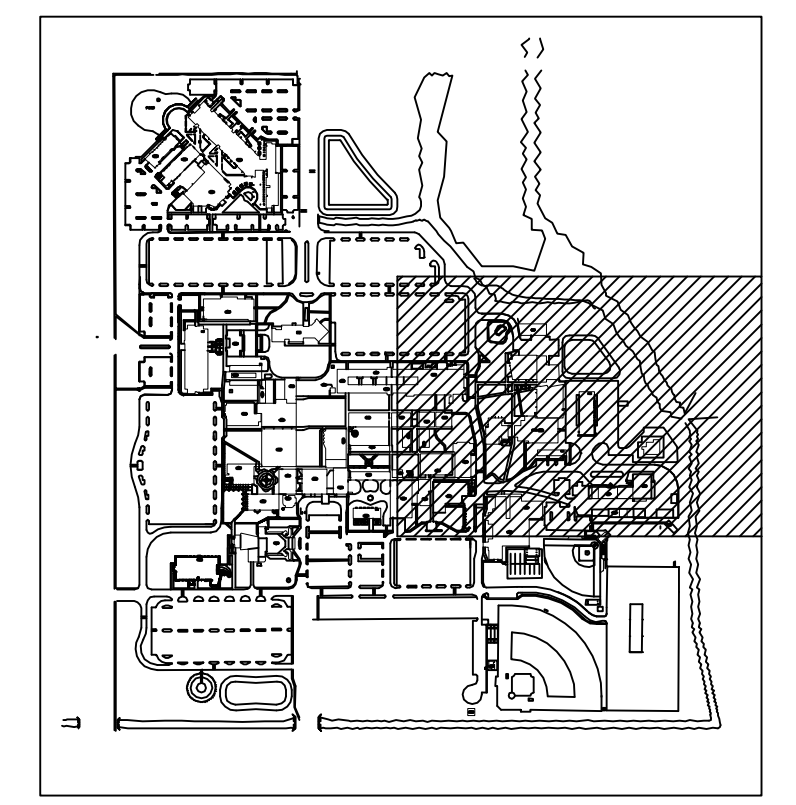
MATCH LINE (SEE SHEET W-2)



MATCH LINE (SEE SHEET W-3)



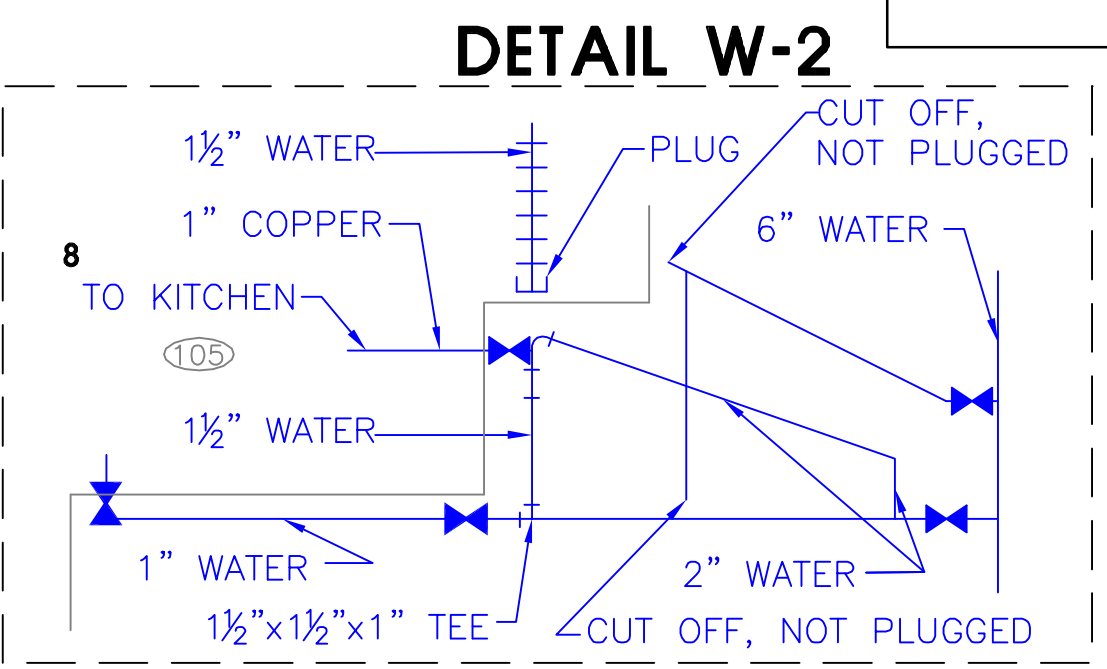
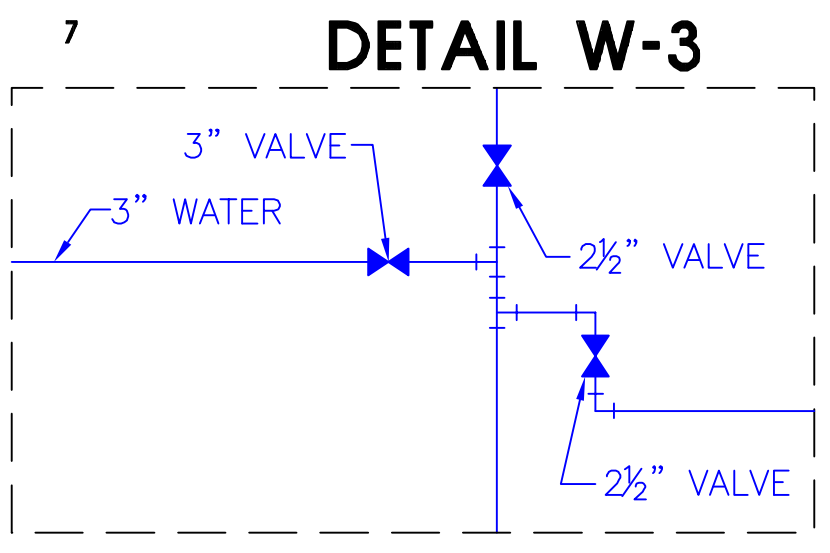
MATCH LINE (SEE SHEET W-6)



VICINITY MAP

LEGEND

	RESTROOM
	ABANDONED LINE
	FIELD VERIFIED WATER VALVE
	PLAN VERIFIED WATER VALVE
	FIELD VERIFIED WATER LINE
	PLAN VERIFIED WATER LINE
P01	VALVE NUMBER (REFER TO SHEET W-8)
(01)	PIPE NUMBER (REFER TO SHEET W-8)
	BACKFLOW PREVENTOR W/ METER (B.F.P. W/ METER)



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PROJECT

**PALM BEACH STATE COLLEGE
LAKE WORTH CAMPUS
MASTER UTILITY LOCATION MAPS**

TITLE

POTABLE WATER

ORIGINAL: _____

REVISIONS:

1	_____
2	_____
3	_____
4	_____
5	_____

JOB NO. 144297004

DRAWN KDC

DESIGNED KDC

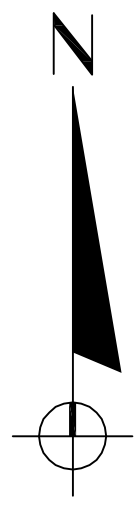
CHECKED MFS

QC MFS

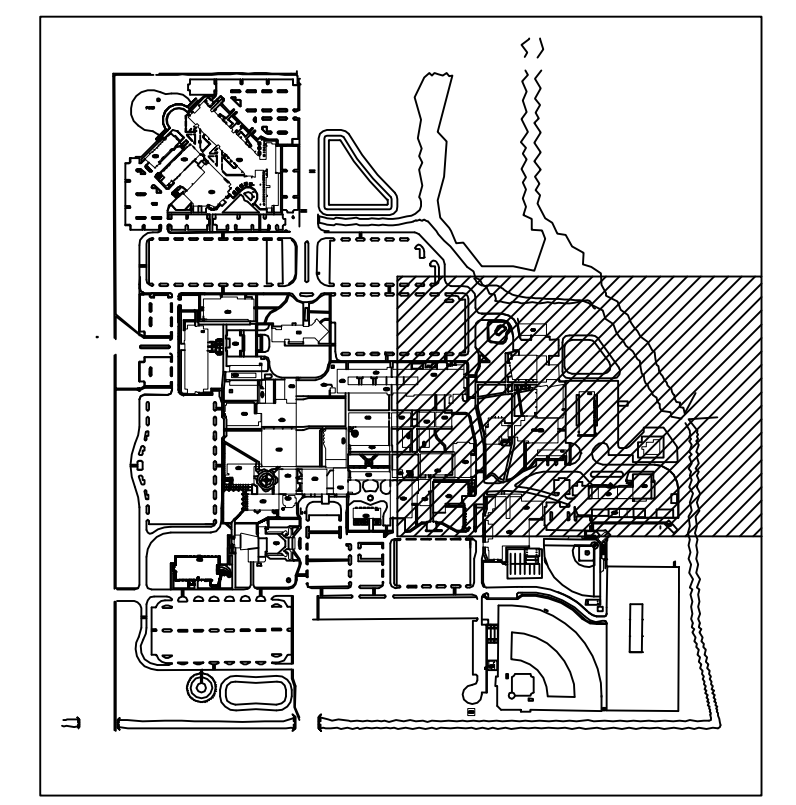
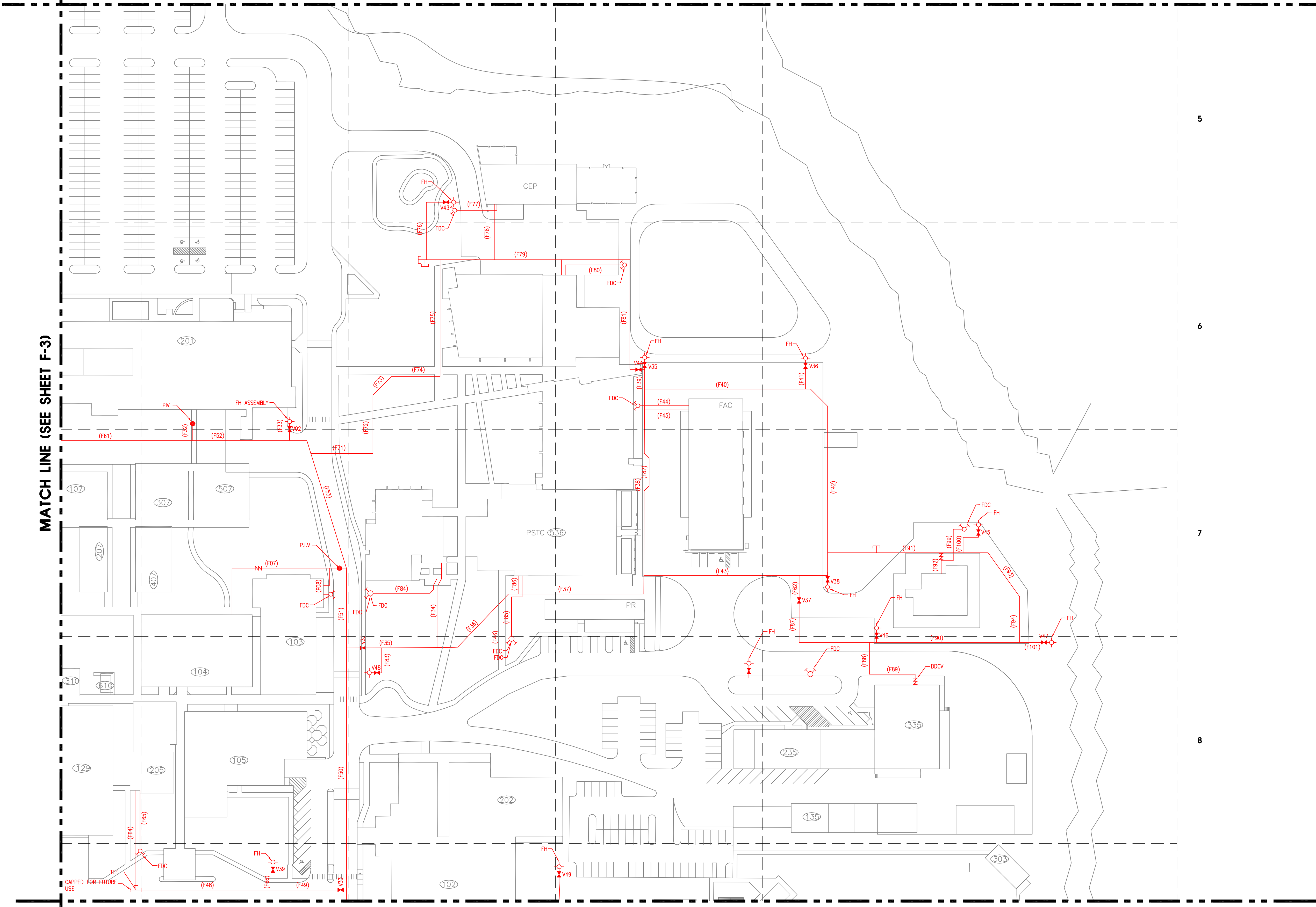
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BOX

SHEET W-4

MATCH LINE (SEE SHEET F-2)

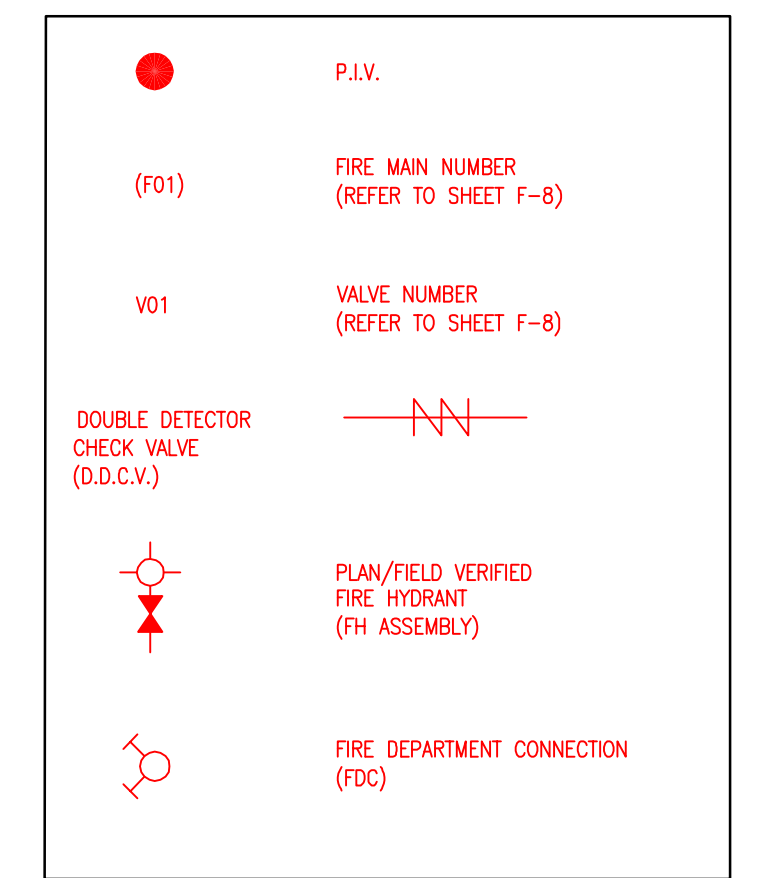


MATCH LINE (SEE SHEET F-3)



VICINITY MAP

LEGEND



MATCH LINE (SEE SHEET F-6)

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**PALM BEACH STATE COLLEGE
LAKE WORTH CAMPUS
MASTER UTILITY LOCATION MAPS**

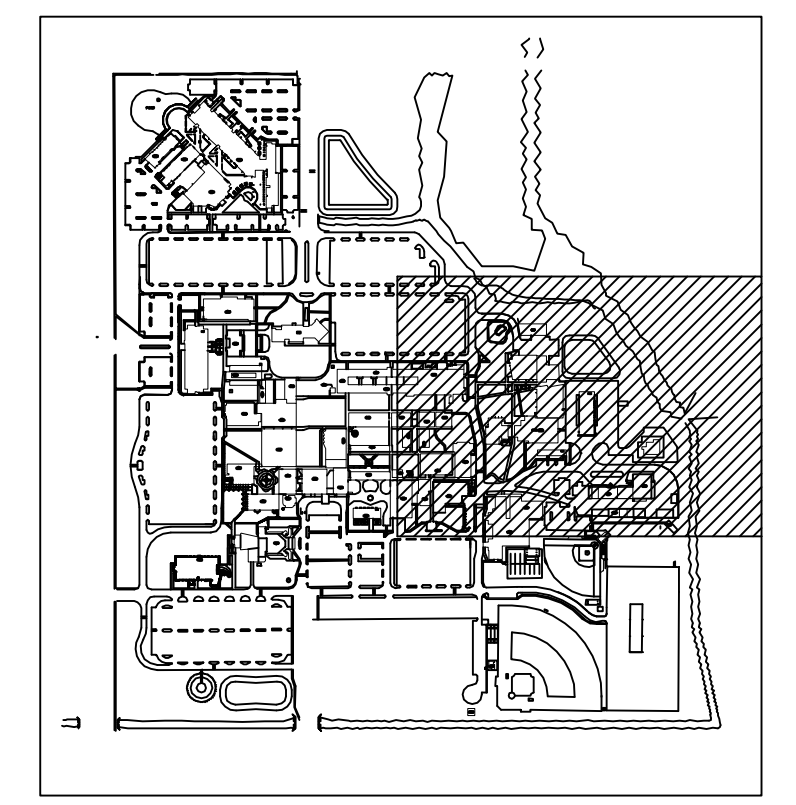
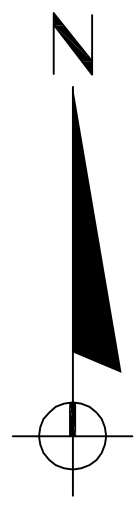
TITLE
FIRE

ORIGINAL:	_____
REVISIONS:	_____
1	_____
2	_____
3	_____
4	_____
5	_____

JOB NO. 144297004
DRAWN KDC
DESIGNED KDC
CHECKED MFS
QC MFS
SHEET F-4

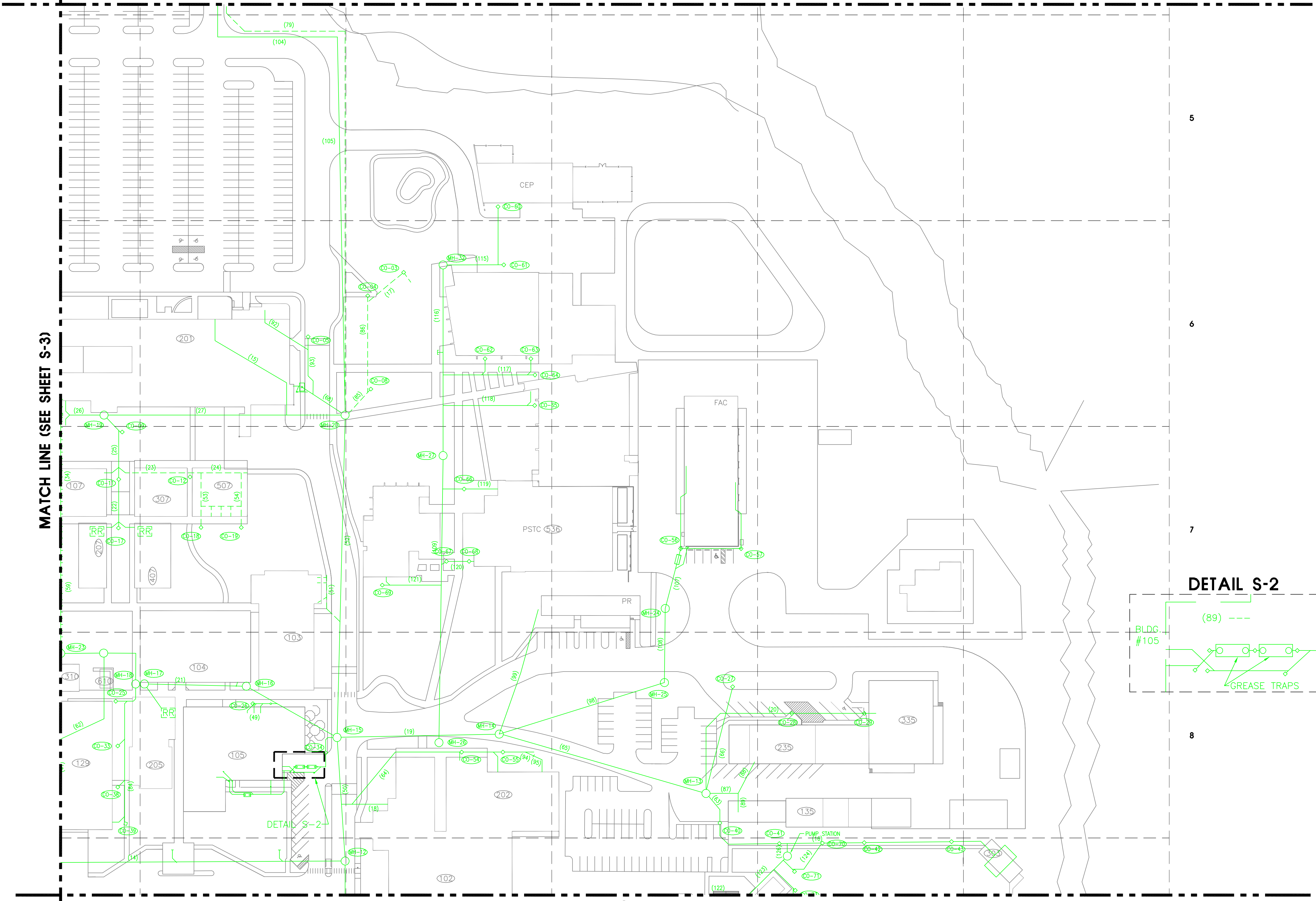
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BOX

MATCH LINE (SEE SHEET S-2)



VICINITY MAP

MATCH LINE (SEE SHEET S-3)



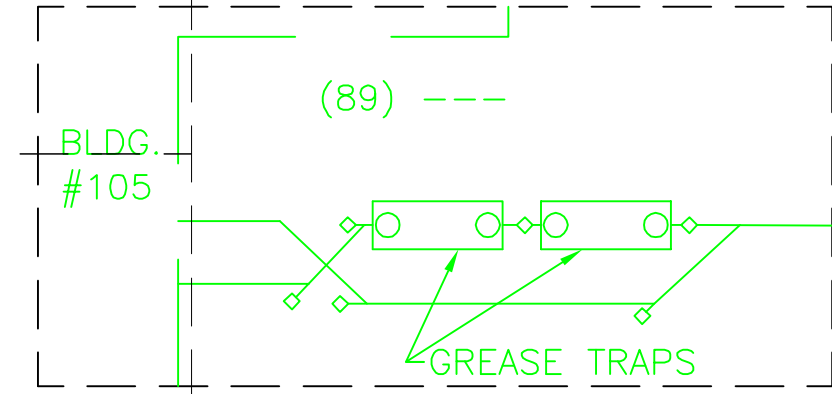
5

6

7

8

DETAIL S-2



LEGEND

- F.M. FORCE MAIN
- V.C.P. VITRIFIED CLAY PIPE
- C.I. CAST IRON PIPE
- ABANDONED SEWER LINE
- ◇ PLAN/FIELD VERIFIED CLEAN OUT (CO)
- MANHOLE (MH)
- FIELD VERIFIED SEWER LINE
- PLAN VERIFIED SEWER LINE
- (01) PIPE NUMBER (REFER TO SHEET S-8)
- MH-01 MANHOLE NUMBER (REFER TO SHEET S-8)
- CO-01 CLEAN OUT NUMBER (REFER TO SHEET S-8)
- V01 VALVE NUMBER (REFER TO SHEET S-8)

MATCH LINE (SEE SHEET S-6)

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PROJECT
**PALM BEACH STATE COLLEGE
LAKE WORTH CAMPUS
MASTER UTILITY LOCATION MAPS**

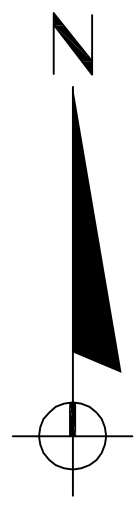
TITLE
SANITARY SEWER

ORIGINAL:	_____
REVISIONS:	_____
1	_____
2	_____
3	_____
4	_____
5	_____

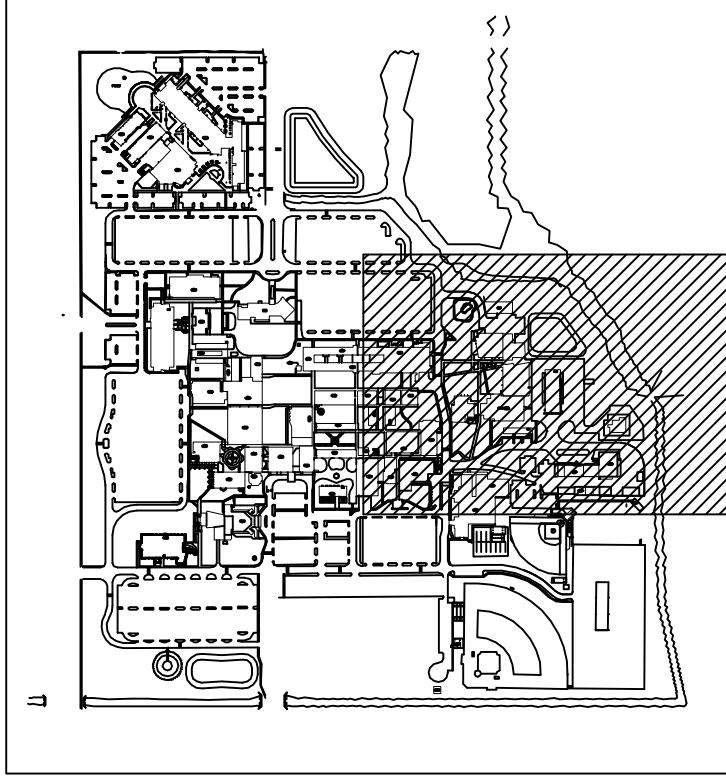
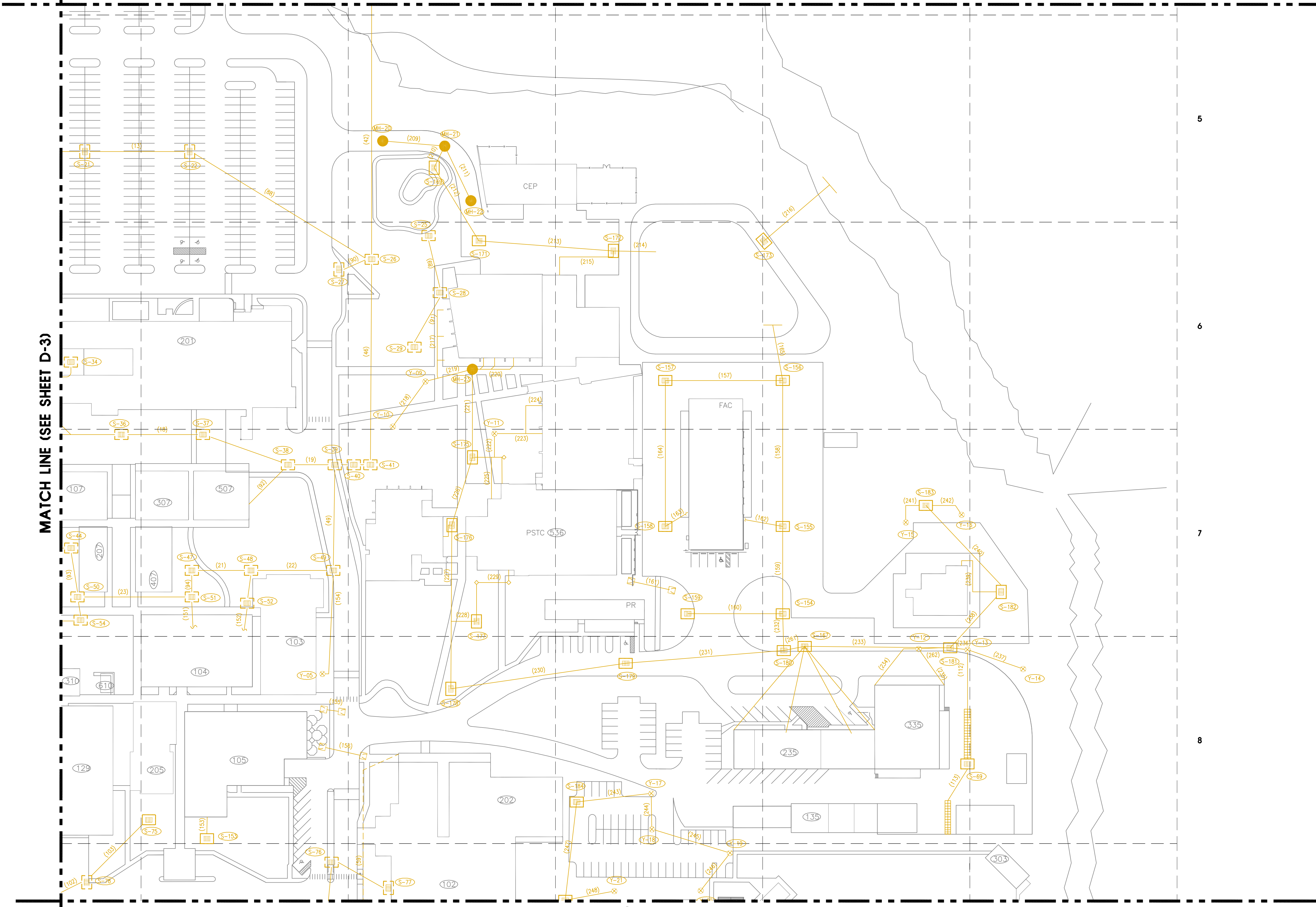
JOB NO. 144297004
DRAWN KDC
DESIGNED KDC
CHECKED MFS
QC MFS
SHEET S-4

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MATCH LINE (SEE SHEET D-2)



MATCH LINE (SEE SHEET D-3)



VICINITY MAP

LEGEND

- PLAN VERIFIED MANHOLE
- FIELD VERIFIED MANHOLE
- CURB BASIN
- FIELD VERIFIED CATCH BASIN
- PLAN VERIFIED CATCH BASIN
- FIELD VERIFIED STORMSEWER PIPE
- PLAN VERIFIED STORMSEWER PIPE
- PLAN VERIFIED STORMSEWER PIPE
- (01) PIPE NUMBER (REFER TO SHEET D-8 & 9)
- S-01 STRUCTURE NUMBER (REFER TO SHEET D-8 & 9)
- MH-01 MANHOLE NUMBER (REFER TO SHEET D-8 & 9)
- Y-01 YARD DRAIN (REFER TO SHEET D-8 & 9)

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PROJECT

**PALM BEACH STATE COLLEGE
LAKE WORTH CAMPUS
MASTER UTILITY LOCATION MAPS**

TITLE

STORM SEWER

ORIGINAL: _____

REVISIONS:

1	_____
2	_____
3	_____
4	_____
5	_____

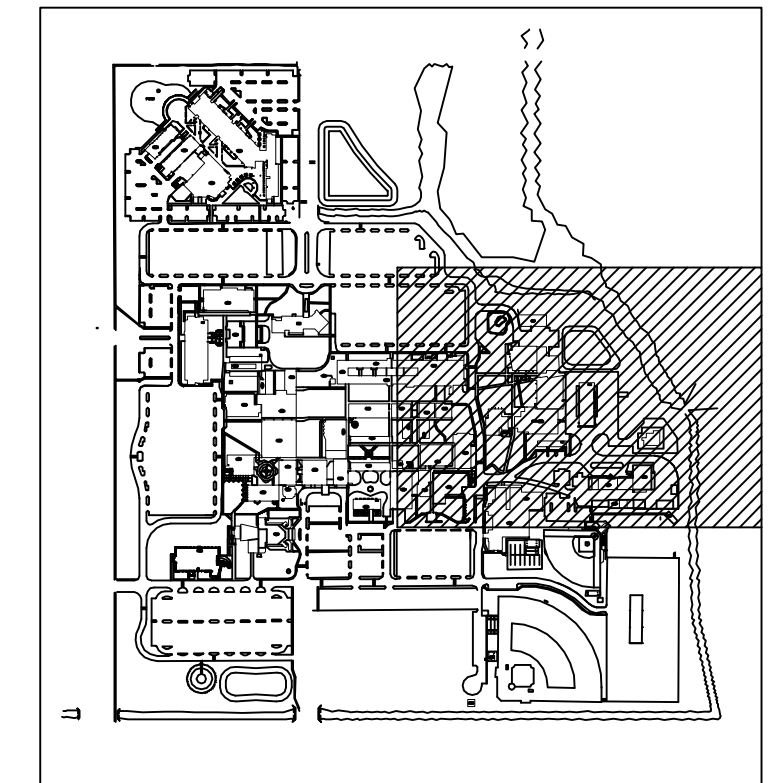
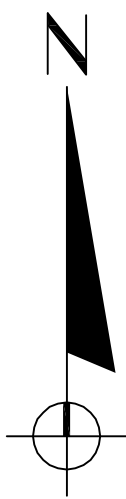
JOB NO. 144297004

DRAWN	KDC
DESIGNED	KDC
CHECKED	MFS
QC	MFS

SHEET D-4

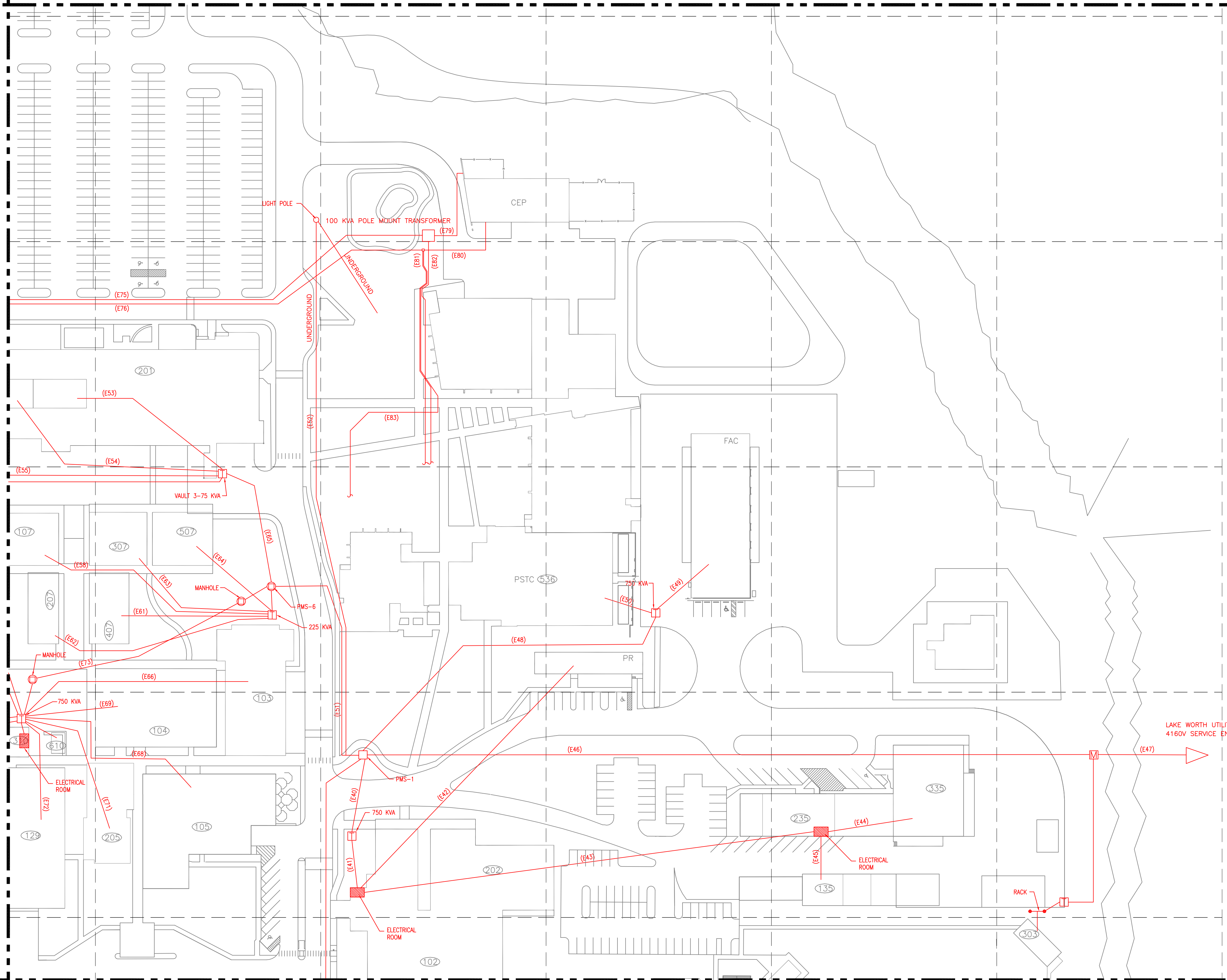
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BOX

MATCH LINE (SEE SHEET E-2)



VICINITY MAP

MATCH LINE (SEE SHEET E-3)

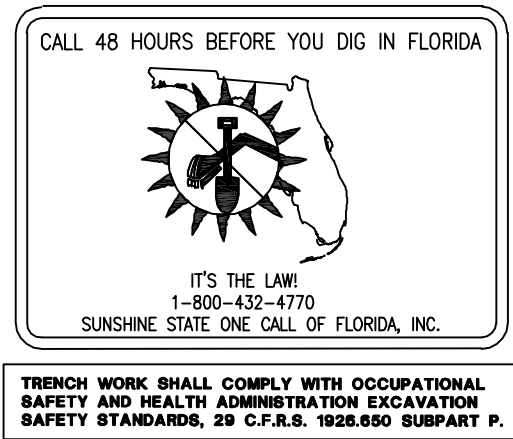


MATCH LINE (SEE SHEET E-6)

LEGEND

M	METER
T	TRANSFORMER
PMS	PAD MOUNTED SWITCH
(E01)	PIPE NUMBER REFER TO SHEET E-8

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PROJECT
**PALM BEACH STATE COLLEGE
LAKE WORTH CAMPUS
MASTER UTILITY LOCATION MAPS**

TITLE
PRIMARY ELECTRICAL

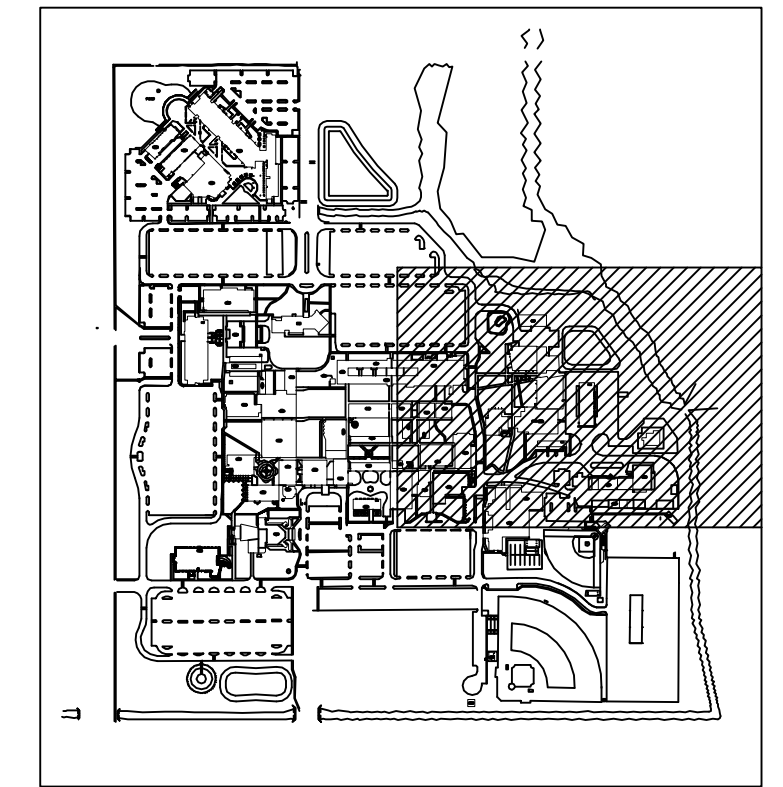
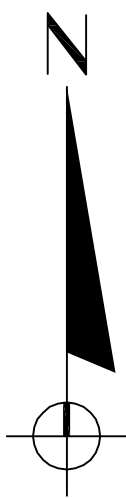
ORIGINAL: _____
REVISIONS:

1	_____
2	_____
3	_____
4	_____
5	_____

JOB NO. 144297004
DRAWN KDC
DESIGNED KDC
CHECKED MFS
QC MFS
SHEET E-4

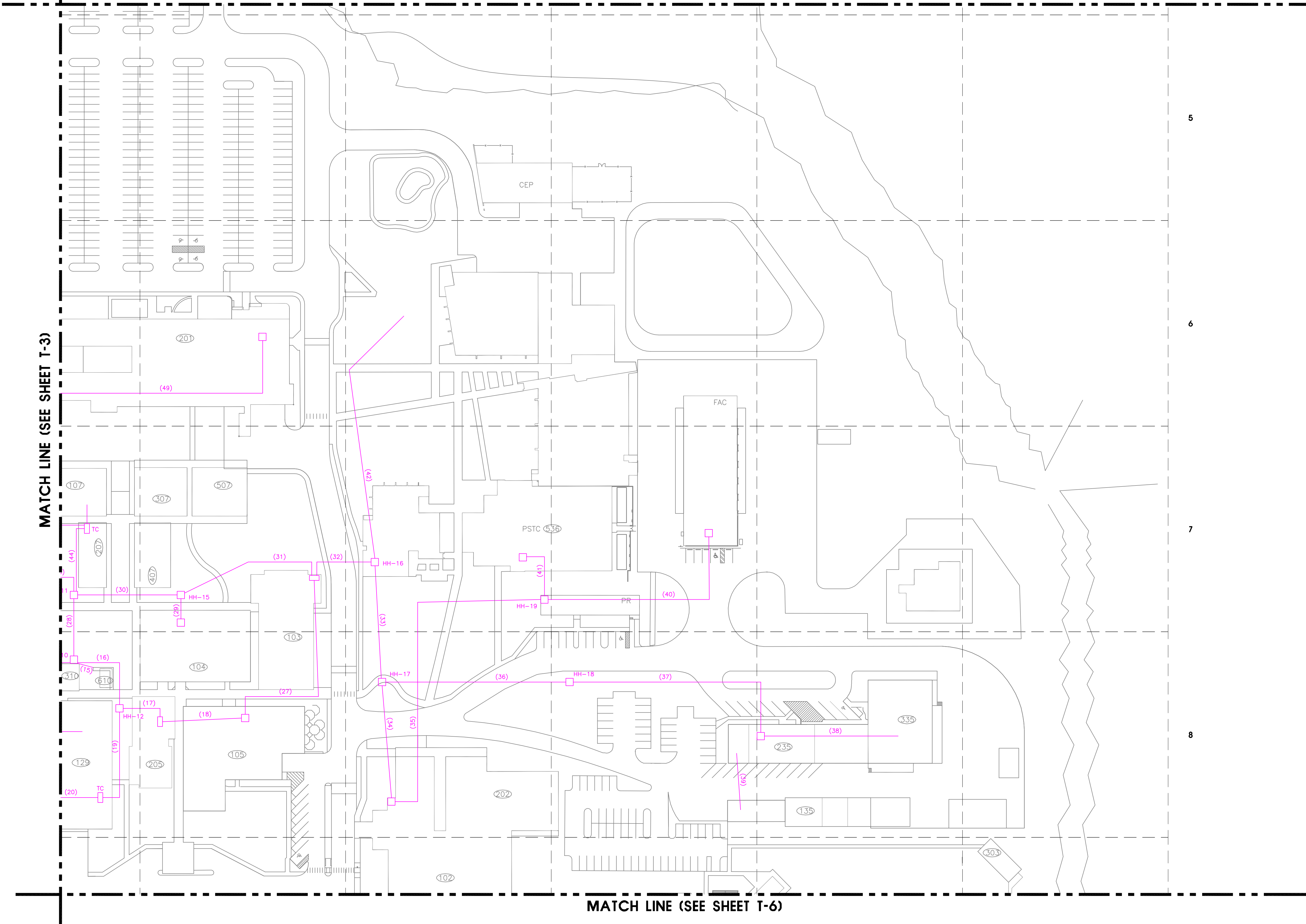
NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BOX

MATCH LINE (SEE SHEET T-2)



VICINITY MAP

MATCH LINE (SEE SHEET T-3)



LEGEND

TC	TELECOMMUNICATIONS CABINET
—	TELECOMMUNICATIONS LINE
HH-01	HAND HOLE NUMBER (REFER TO SHEET T-8)
(01)	TELEPHONE LINE NUMBER (REFER TO SHEET T-8)

MATCH LINE (SEE SHEET T-6)

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PROJECT
**PALM BEACH STATE COLLEGE
LAKE WORTH CAMPUS
MASTER UTILITY LOCATION MAPS**

TITLE
TELEPHONE CONDUIT

ORIGINAL: _____
REVISIONS:

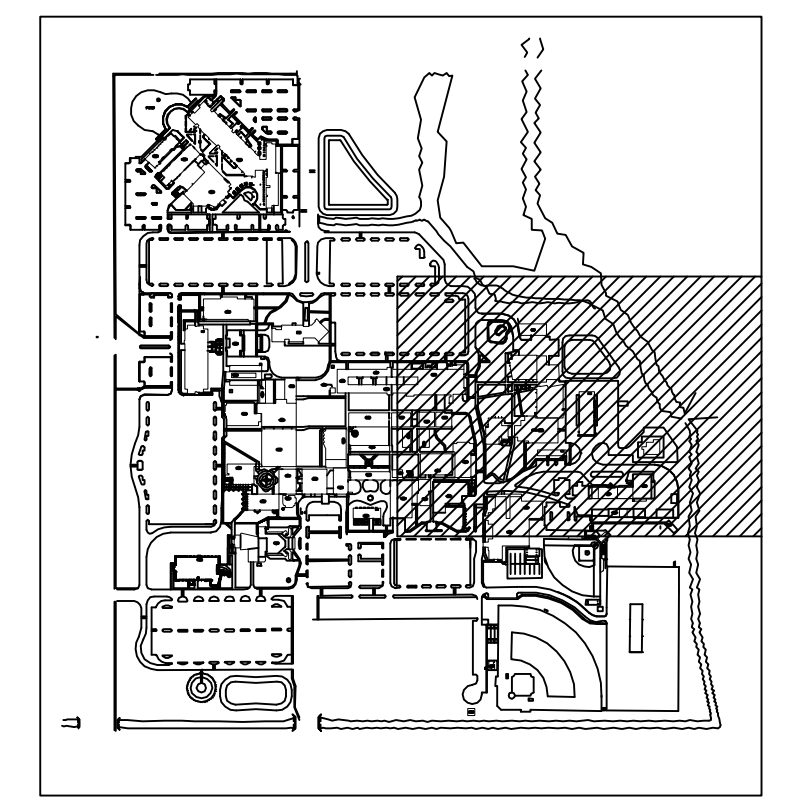
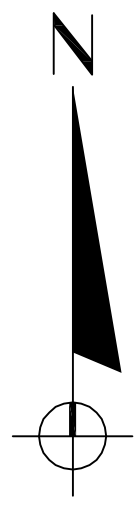
1	_____
2	_____
3	_____
4	_____
5	_____

JOB NO. 144297004
DRAWN KDC
DESIGNED KDC
CHECKED MFS
QC MFS

NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BOX

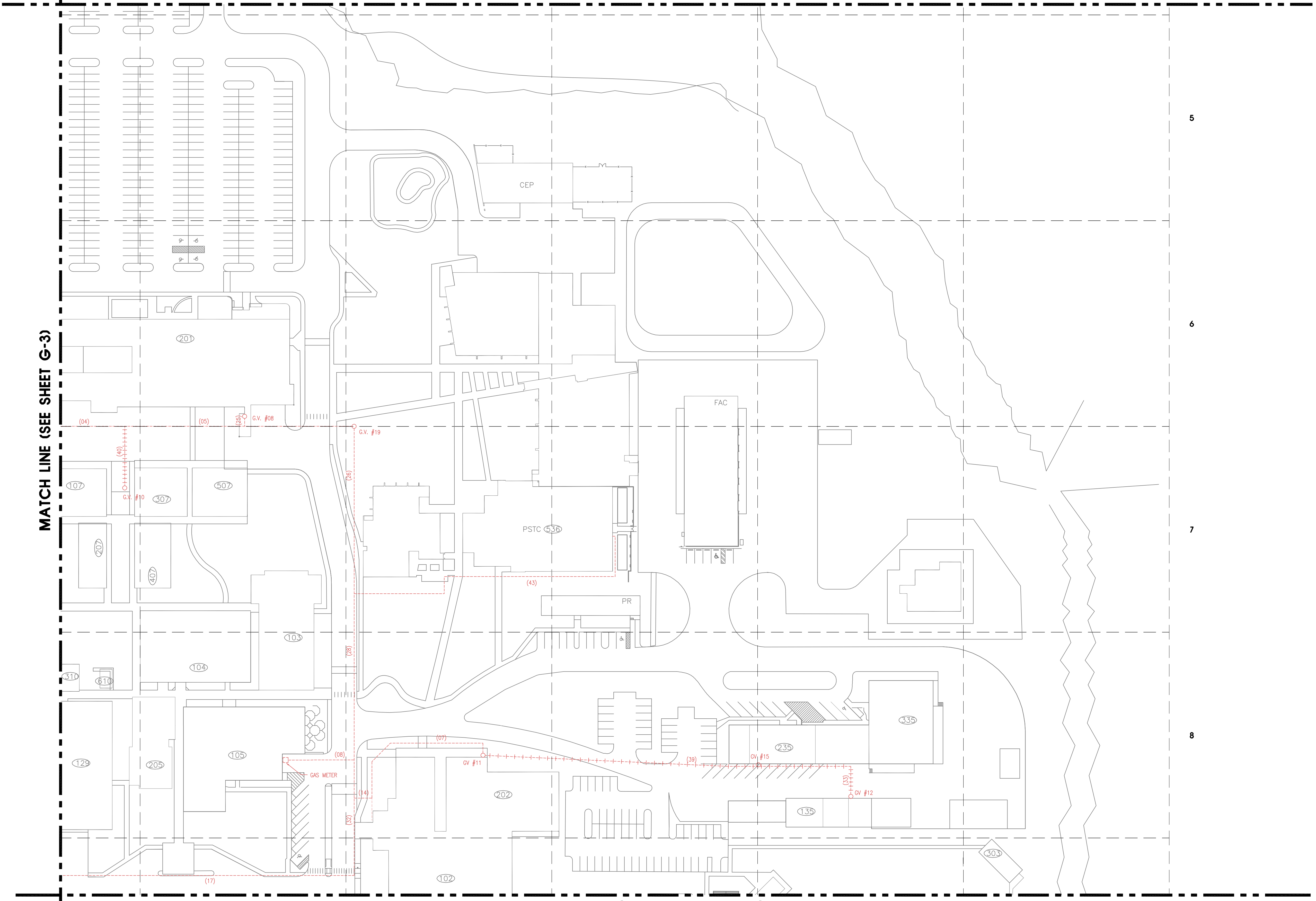
SHEET T-4

MATCH LINE (SEE SHEET G-2)



VICINITY MAP

MATCH LINE (SEE SHEET G-3)

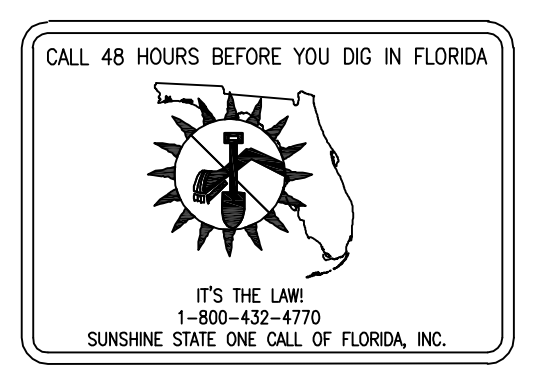


MATCH LINE (SEE SHEET G-6)

LEGEND

	GAS METER
	FIELD VERIFIED GAS VALVE
	PLAN VERIFIED GAS VALVE
	PLAN VERIFIED GAS LINE
	FIELD VERIFIED GAS LINE
	GAS LINE ABANDONED IN PLACE
G.V. #1	GAS PIPE NUMBER (REFER TO TABLE G-8)
(01)	GAS MAIN NUMBER (REFER TO TABLE G-8)

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PROJECT
**PALM BEACH STATE COLLEGE
 LAKE WORTH CAMPUS
 MASTER UTILITY LOCATION MAPS**

TITLE
GAS

ORIGINAL: _____
 REVISIONS:
 1 _____
 2 _____
 3 _____
 4 _____
 5 _____

JOB NO. 144297004
 DRAWN KDC
 DESIGNED KDC
 CHECKED MFS
 QC MFS
SHEET G-4

APPENDIX C

Field Forms



Attachment A. Daily PFAS Sampling Checklist

Date: 8/14/19

Site Name: Palm Beach State College

Weather (temperature/precipitation): Sunny, high of 90°F

Please check all boxes that apply and describe any exceptions in the notes section below along with QA/QC methods used to assess potential sample cross-contamination as a result.

Field Clothing and PPE:

- No water- or stain-resistant clothing (e.g., GORE-TEX®)
- During collection of water and sediment samples, no water- or stain-resistant boots OR water- or stain-resistant boots covered by PFAS-free over-boots
- Field boots (or over-boots) are made of polyurethane, PVC, rubber, or untreated leather
- Waders or rain gear are made of polyurethane, PVC, vinyl, wax-coated or rubber
- Clothing has not been recently laundered with a fabric softener
- No coated HDPE suits (e.g., coated Tyvek® suits)
- Field crew has not used cosmetics, moisturizers, or other related products today
- Field crew has not used sunscreen or insect repellants today, other than products approved as PFAS-free

Field Equipment:

- Sample containers and equipment in direct contact with the sample are made of HDPE, polypropylene, silicone, acetate or stainless steel, not LDPE or glass
- Sample caps are made of HDPE or polypropylene and are not lined with Teflon™
- No materials containing Teflon™, Viton™, or fluoropolymers
- No materials containing LDPE in direct contact with the sample (e.g., LDPE tubing, Ziploc® bags)
- No plastic clipboards, binders, or spiral hard cover notebooks
- No waterproof field books
- No waterproof or felt pens or markers (e.g., certain Sharpie® products)
- No chemical (blue) ice, unless it is contained in a sealed bag
- No aluminum foil
- No sticky notes (e.g., certain Post-It® products)

Decontamination:

- Reusable field equipment (e.g., inner drill rods, samplers) decontaminated prior to reuse
- "PFAS-free" water is on-site for decontamination of field equipment
- Alconox® or Liquinox® used as decontamination detergent

Food and Drink:

- No food or drink on-site, except within staging area
- Food in staging area is contained in HDPE or stainless steel container

Notes:

Field Team Leader Name (Print): Amy DeSantis

Field Team Leader Signature: Amy DeSantis

Date/Time: 8/14/19 8:20

Project: <u>FR3030/01/03</u>	Date: <u>8/14/19</u>
Project No.: <u>PBSC</u>	Task No.: _____
Contractors: <u>Geosyntec, PDS</u>	

Work Performed	
Well Installation: _____	Sampling Soil: <input checked="" type="checkbox"/>
Soil Borings: <input checked="" type="checkbox"/>	Sampling SW/Sediment: <input checked="" type="checkbox"/>
DPT: <input checked="" type="checkbox"/>	Sampling Monitor Wells: _____
Well Inventory: _____	Sampling Hazardous Waste: _____
Other: _____	Sampling Drums: _____

Observations/Issues of Concern	
0725	Audrey Bartzler (AB) leaves hotel for Palm Beach State College (PBSC)
0745	AB onsite.
0750	Dennis Jensen and Bobby (FDEP) onsite. Amy Descotis, Andrew Janeczek, Mary Turner and PDS onsite.
0812	AB gives tailgate safety + discusses SOG.
0820	PDS begins setting up decon pit while Geosyntec sets up HA bucket decon station and marks locations. AD speaks w/ fire personnel about area near burn tower to south (where burn props located) - he indicated no AFFF wage - only propane. AD adds SS-4 thru SS-6 in gas field area and SS-7 east of burn building adjacent to canal. DJ adds SS Sed -7 north of SS-1 in retention pond. DJ did not want to add 2nd TMW.
0845	Bud begins utility locates
0910	AB samples SW-1 and DUP-1

Plans/Future Activities


 Signature/Date

Project: <u>PBSC</u>	Date: <u>8/14/19</u>
Project No.: <u>TR3020/01/03</u>	Task No.: _____
Contractors: <u>GEOTEK, PDS</u>	_____

Work Performed	
Well Installation: _____	Sampling Soil: <input checked="" type="checkbox"/>
Soil Borings: <input checked="" type="checkbox"/>	Sampling SW/Sediment: <input checked="" type="checkbox"/>
DPT: <input checked="" type="checkbox"/>	Sampling Monitor Wells: _____
Well Inventory: _____	Sampling Hazardous Waste: _____
Other: _____	Sampling Drums: _____
_____	_____
_____	_____

Observations/Issues of Concern	
FDEP + Geosyntec decide to install TMW-2 in gas field area depression.	
1020	PDS finish setting TMW-1 @ 4-14 ft
1125	sample TMW-1 (4-14) and collect DUP-2 (4-14).
1145	AB + DJ check samples to COC
12-12:30	lunch break
1250	AB + AD complete soil borings, begin collecting sediment samples including additional sed from west side of retention pond
1400	complete sed samples (including 4 from grates)
1420	AD collect FRB-1
1425	offsite w/ AD and FDEP, headed to PBFR. AD and MT stay onsite (waiting out rain) to finish GPSing points
1500	AB + AD onsite @ PBFR w/ FDEP. check in w/ Captain. Geosyntec + FDEP mark boring locations for work on 8/15.
1545	Geosyntec and FDEP off-site

Plans/Future Activities

 8/14/19

 Signature/Date

Field Activities Record Form



Project Name Palm Beach State College (PBSC)

Site Location Lake Worth, FL

Project/Task Number FR3630/01/03

Type of Work PFAS sampling

Date 8/14/19

Field Personnel Amy DeSantis, Andrew Janiczek, Mary Turner, Audrey Batzer

Contractors Geotek, Preferred Drilling Solutions

Time	Notes:
------	--------

706 Amy DeSantis (AD), Andrew Janiczek (AJ), Mary Turner (MT) load vehicle + depart Boca Raton office.

750 AD, AJ, MT arrive at Palm Beach State College (Site). Audrey Batzer (AB), Bud

750 ^(AD) AD, Connor (Geotek) + Dennis Jensen, Bobby (FDEP) onsite.

810 PDS onsite (Trey + Daniel)
~~820~~ 812 AB conducts Health + Safety tailgate, review scope. AD completes PFAS daily checklist.

830 AD marking sample locations with Bud.

900 AB + MT collecting surface water sampling.

920 AD begins soil sampling. Refer to ~~920~~ ^(AD) sample log/sample summary table.

1145 Complete soil samples SS-1 through SS-6. AB + DJ completing chain-of-custody.

1200 AB + AD break for lunch, complete paperwork.

1230 AB + AD resume work, proceed to SS-7, then sediment samples.

1400 Complete sediment samples. Stage 1DW.

1420 collect ^(AD) FRB-1. AJ + MT offsite for gas, will return for final GPS locations.

Amy DeSantis 8/14/19

Field Activities Record Form



Project Name Palm Beach State College (PBSC)

Site Location see pg. 1

Project/Task Number FR3630/01/03

Type of Work _____

Date 8/14/19

Field Personnel _____

Contractors _____

see pg. 1
↓

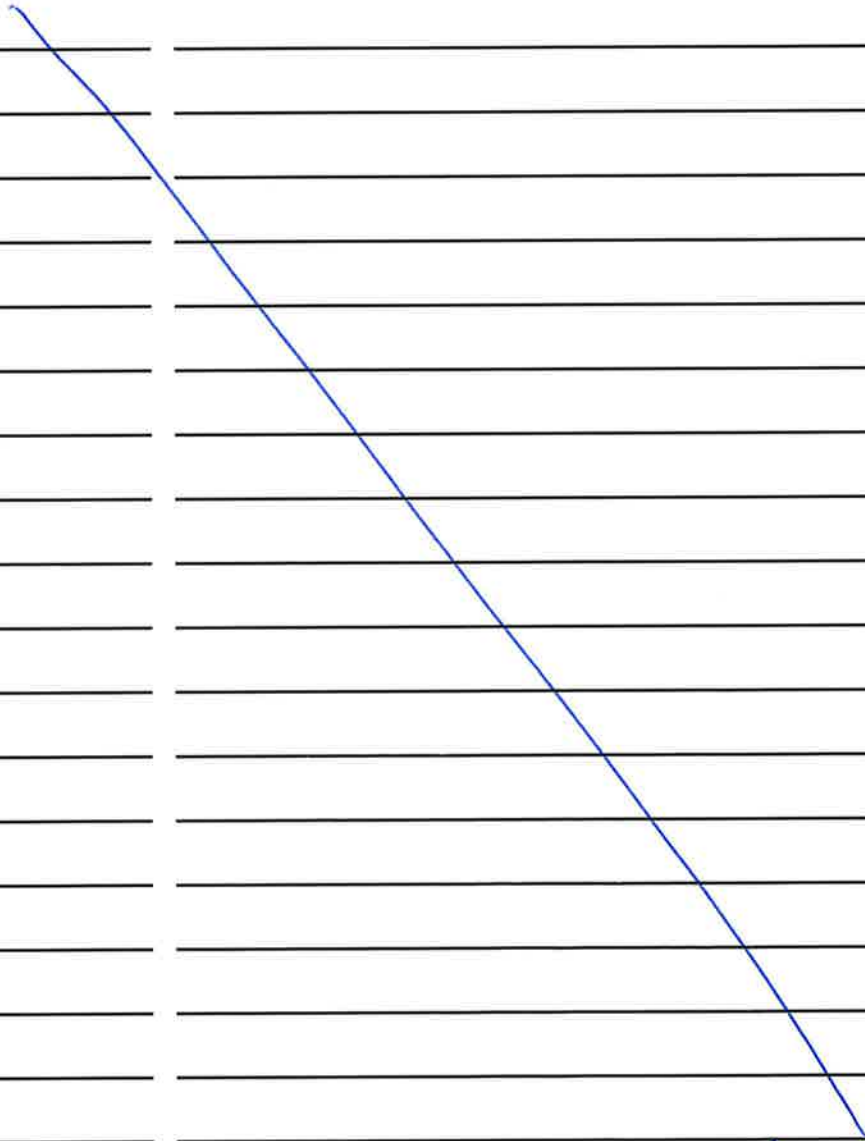
Time	Notes:
------	--------

1405

late entry - PDS offsite.

1420

FDEP, AB, AD offsite. Mobilize to Palm Beach Fire Rescue.



Amy DeSantis 8/14/19

Field Activities Record Form



Project Name Palm Beach State College (PBSC)

Site Location Lake Worth, FL

Project/Task Number FR3630/01/03

Type of Work PFAS Sampling - Temp. Monitoring

Well Date 8/14/19
install/sampling

Field Personnel MCT, ALD, AB

Contractors Preferred Drilling (PDS) ; GeoTek (Martin 'Bud' Connor)

Time	Notes:
------	--------

0715	Mary Turner (MCT), Andrew Janeczek (AJJ) and Amy Desantis (ALD) depart from Boca Raton, FL office for site.
0750	Arrive at site. meet with Audrey Barzer (AB), Dennis Jensen (DJ) [FDEP] and Bud Connor (BC) [GeoTek].
0810	Preferred Drilling (Tracy and Danny) onsite. AB conducts H&S Tailgate.
0820	ALD begins marking out sample locations. PDS begins constructing decontamination pit. MCT/AJJ begin setting up hand auger decon station.
0915	Begin calibration of YSI/turbidity meter. <small>see water quality calibration form.</small>
1000	Collect EQB-1 off of lead ^{DPI} rod (outside/inside). Begin installation of TMW-1
1027	Begin development of TMW-1
1037	Complete development of TMW-2
1055	Begin purging TMW-1
1100	Begin installation of TMW-2
1125	collect groundwater sample at TMW-2
1137	Begin development of TMW-2
1150	Complete development of TMW-2
1224	Begin purging TMW-2
1240	Begin sampling TMW-2
1310	Begin GPS activities.
1315	Collect IDW sample
1405	Weather alert for thunder/lightning. Suspend GPS activities. PDS offsite for day. ALD, AB and DJ mobilize to PBSC to stakeout sampling locations for tomorrow's field activities.

Table 1: Sampling Work Plan
Palm Beach State College

8/14/19

Rationale	Location ID	Sample ID	Time	Matrix	Depth (ft BLS)	Sample Method	Comments
Historical AFFF Use Areas	SS-1	SS-1 (0-1)	1032	Soil	0-1	HA	light br dark brown SAND SAND (SP-SM) very fine. dry. 210%. 1" rocks with silt
		SS-1 (1-2)	1034		1-2		light brown and dark brown SAND with silt (SP-SM), very fine, dry
	SS-2	SS-2 (0-1)	940		0-1		light brown v. fine SAND, 40% silt, SP, dry
		SS-2 (1-2)	945		1-2		light brown v. fine SAND, 40% silt, trace roots, moist SP
	SS-3	SS-3 (0-1)	1004		0-1		light brown v. fine SAND (SP) -dry mottled with tan, trace red/orange dry clayey spots (old brick fragments)
		SS-3 (1-2)	1002		1-2		light brown-medium brown v. fine SAND, 40% silt, dry (SP)
	SS-4 ^{CS}	SS-4 (0-1)	1053		0-1		dark brown v. fine SAND (SP) 40% silt, 40% roots, dry
		SS-4 (1-2)	1056		1-2		dark brown v. fine SAND (SP), 40% silt, dry

8/14/19
Table 1: Sampling Work Plan
Palm Beach State College

Rationale	Location ID	Sample ID	Time	Matrix	Depth (ft BLS)	Sample Method	Comments
Historical AFFF Use Areas	SS-5 ^{CS}	SS-5 (0-1)	1104	Soil	0-1	HA	dark brown v. fine SAND (SP), <10% silt, dry
		SS-5 (1-2)	1106		1-2		dark brown v. fine SAND (SP), <10% silt, dry
	SS-6 ^{CS}	SS-6 (0-1)	1129		0-1		medium brown v. fine SAND (SP), dry
		SS-6 (1-2)	1131		1-2		tan v. fine SAND (SP), moist, trace small clay nodules (1")
	SS-7 ^{CS}	SS-7 (0-1)	1244		0-1		medium brown v. fine SAND (SP), <10% silt, dry
		SS-7 (1-2)	1246		1-2		dark brown v. fine SAND (SP) <10% silt, dry
	SS-8 ^{CS}	SS-8 (0-1)			0-1		
		SS-8 (1-2)			1-2		(AD)

SS-8 not collected per FDEP. changed to a sediment sample (sed-7)

Table 1: Sampling Work Plan
Palm Beach State College

8/14/19

Rationale	Location ID	Sample ID	Time	Matrix	Depth (ft BLS)	Sample Method	Comments
Historical AFFF Use Areas	Sed-1	Sed-1 (0-1')	1317	Sediment	0-1	HA	dark brown v. fine SAND (SP). Saturated
	Sed-2	Sed-2 (0-1')	1255		0-1	HA	medium brown-dark brown, very fine SAND (SP), Saturated, 40% rocks (up to 1")
	Sed-3	Sed-3 (0-1')	1320		0-1	HA	tan very fine SAND (SP), Saturated
	Sed-4	Sed-4 (0-1')	1331		0-1	Grab from storm drain	medium coarse SAND (SW) - gray/brown with small (1mm) white grains, minor sheen.
	Sed-5	Sed-5 (0-1')	1343		0-1		medium coarse SAND (SW) gray/dark brown with small (1mm) white/gray grains
	Sed-6	Sed-6 (0-1')	1346		0-1		medium coarse SAND (SW) gray/dark brown with small (1mm) white/gray grains
	SW-1	SW-1	910		Surface water	N/A	Grab from retention pond
		DUP 1	916				
	SW-1	SW-2	see AB notes				

↓ sed-3 (0-1') 1355 0-1 sediment storm drain dark brown medium coarse SAND (SW), small white grains (~1mm)

8/14/19
Table 1: Sampling Work Plan
Palm Beach State College

Rationale	Location ID	Sample ID	Time	Matrix	Depth (ft BLS)	Sample Method	Comments	
Historical AFFF Use Areas	Sed-1	Sed-1 (0-1')	1317	Sediment	0-1	HA	refer to A. DeSantis logs for sediment descriptions.	
	Sed-2	Sed-2 (0-1')	1255		0-1	from canal		
	Sed-3	Sed-3 (0-1')	1355		0-1			
	Sed-4	Sed-4 (0-1')	1331		0-1			
	Sed-5	Sed-5 (0-1')	1343		0-1	Grab from storm drain		
	Sed-6	Sed-6 (0-1')	1346		0-1			
	SW-1	SW-1	SW-1	0910	Surface water	N/A	Grab from retention pond	w/sampler
			DUP-1	0910				"
		SW-2	SW-2	1257			Grab from canal	w/sampler

Table 1: Sampling Work Plan
Palm Beach State College

8/14/19

Rationale	Location ID	Sample ID	Time	Matrix	Depth (ft BLS)	Sample Method	Comments
Temporary Monitoring Wells							
Historical AFFF Use Areas	TMW-1	TMW-1 ⁴⁻¹⁴ (5-15)	1125	Groundwater	3-15 4-14	DPT	
		DUP-2 ⁴⁻¹⁴ (5-15)	1125		3-15 4-14		
	TMW-2 ⁴⁻¹⁴ (5-15)	TMW-2 ⁴⁻¹⁴ (5-15)	1240		5-15 4-14		
Laboratory QA/QC Samples							
Assess potential sources of contamination from DPT and HA sampling equipment	Equipment Blanks (ratio of 1:10)	EQB-1	1000	Water	N/A		off lead rod (inside + outside)
		EQB 2	1020				off HA bucket before use @ SS-1 (0-1)
		EQB 3	1205				off HA before use @ SS-7 (0-1)
Evaluate potential impact of sample cross-contamination	Field Reagent Blanks (1 per cooler)	FRB 1	1420				~
		FRB 2					per DJ
		FRB 3					
IDW Sample							
Waste characterization	Drum 1	IDW-1-Water	1315	Water	VOCs, SVOCs, RCRA metals, PFAS		
	Drum 2						

chlorhexidine gluconate → product sample collected @ 1100

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA				
Well Number: TMW-1	Site Name: Palm Beach State College (PBSC)	FDEP Facility I.D. Number: N/A	Well Install Date(s): 8/14/19	
Well Location and Type (check appropriate boxes): <input checked="" type="checkbox"/> On-Site <input type="checkbox"/> Right-of-Way <input type="checkbox"/> Off-Site Private Property <input checked="" type="checkbox"/> Above Grade (AG) <input type="checkbox"/> Flush-to-Grade		Well Purpose: <input type="checkbox"/> Perched Monitoring <input type="checkbox"/> Shallow (Water-Table) Monitoring <input type="checkbox"/> Intermediate or Deep Monitoring <input checked="" type="checkbox"/> Remediation or Other (describe) Temporary shallow monitoring well		Well Install Method: DPT
If AG, list feet of riser above land surface: 1		Surface Casing Install Method: N/A		
Borehole Depth (feet): 14	Well Depth (feet): 14	Borehole Diameter (inches): 4.5	Manhole Diameter (inches): N/A	Well Pad Size: N/A feet by N/A feet
Riser Diameter and Material: 1" PVC	Riser/Screen Connections: <input checked="" type="checkbox"/> Flush-Threaded <input type="checkbox"/> Other (describe)	Riser Length: 4 feet from 0 feet to 4 feet		
Screen Diameter and Material: 1" PVC pre-packed		Screen Slot Size: 0.010"	Screen Length: 10 feet from 4 feet to 14 feet	
1 st Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		1 st Surface Casing I.D. (inches): N/A	1 st Surface Casing Length: _____ feet from _____ feet to _____ feet	
2 nd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		2 nd Surface Casing I.D. (inches): N/A	2 nd Surface Casing Length: _____ feet from _____ feet to _____ feet	
3 rd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		3 rd Surface Casing I.D. (inches): N/A	3 rd Surface Casing Length: _____ feet from _____ feet to _____ feet	
Filter Pack Material and Size: 20/30 silica sand	Prepacked Filter Around Screen (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Filter Pack Length: 11 feet from 3 feet to 14 feet		
Filter Pack Seal Material and Size:	N/A - temporary monitoring well	Filter Pack Seal Length: _____ feet from _____ feet to _____ feet		
Surface Seal Material:	N/A - temporary monitoring well	Surface Seal Length: _____ feet from _____ feet to _____ feet		

WELL DEVELOPMENT DATA			
Well Development Date: 8/14/19	Well Development Method (check one): <input type="checkbox"/> Surge/Pump <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Compressed Air <input type="checkbox"/> Other (describe)		
Development Pump Type (check): <input checked="" type="checkbox"/> Centrifugal <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Submersible <input type="checkbox"/> Other (describe): honda pump	Depth to Groundwater (before developing in feet): 4.81 ft BLS		
Pumping Rate (gallons per minute): 3	Maximum Drawdown of Groundwater During Development (feet): ~0.5	Well Purged Dry (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Pumping Condition (check one): <input checked="" type="checkbox"/> Continuous <input type="checkbox"/> Intermittent	Total Development Water Removed (gallons): 30	Development Duration (minutes): 10	Development Water Drummed (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Appearance (color and odor) At Start of Development: gray-brown ; no odors		Water Appearance (color and odor) At End of Development: clear ; no odor	

WELL CONSTRUCTION OR DEVELOPMENT REMARKS
-Temporary monitoring well location that was installed, developed, sampled, and removed within 24 hours - 1 ft of stick-up - water level measured ft BLS, not ft BTOC - start development @ 1027 end @ 1037 - wcm and tubing could not fit down well at the same time, drawdown measured at completion of development.

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA					
Well Number: TMW-2	Site Name: Palm Beach State College (PBSC)	FDEP Facility I.D. Number: N/A	Well Install Date(s): 8/14/19		
Well Location and Type (check appropriate boxes): <input checked="" type="checkbox"/> On-Site <input type="checkbox"/> Right-of-Way <input type="checkbox"/> Off-Site Private Property <input checked="" type="checkbox"/> Above Grade (AG) <input type="checkbox"/> Flush-to-Grade		Well Purpose: <input type="checkbox"/> Perched Monitoring <input type="checkbox"/> Shallow (Water-Table) Monitoring <input type="checkbox"/> Intermediate or Deep Monitoring <input checked="" type="checkbox"/> Remediation or Other (describe) Temporary shallow monitoring well		Well Install Method: DPT	
If AG, list feet of riser above land surface: 2				Surface Casing Install Method: N/A	
Borehole Depth (feet): 14	Well Depth (feet): 14	Borehole Diameter (inches): 4.5	Manhole Diameter (inches): N/A	Well Pad Size: N/A feet by N/A feet	
Riser Diameter and Material: 1" PVC	Riser/Screen Connections: <input checked="" type="checkbox"/> Flush-T threaded <input type="checkbox"/> Other (describe)	Riser Length: 4 feet from 0 feet to 4 feet			
Screen Diameter and Material: 1" PVC pre-packed		Screen Slot Size: 0.010"	Screen Length: 10 feet from 4 feet to 14 feet		
1 st Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		1 st Surface Casing I.D. (inches): N/A	1 st Surface Casing Length: _____ feet from _____ feet to _____ feet		
2 nd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		2 nd Surface Casing I.D. (inches): N/A	2 nd Surface Casing Length: _____ feet from _____ feet to _____ feet		
3 rd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		3 rd Surface Casing I.D. (inches): N/A	3 rd Surface Casing Length: 4 MT feet from 0 feet to 4 feet		
Filter Pack Material and Size: 20/30 silica sand	Prepacked Filter Around Screen (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Filter Pack Length: 11 feet from 3 feet to 14 feet		
Filter Pack Seal Material and Size:	N/A - temporary monitoring well		Filter Pack Seal Length: _____ feet from _____ feet to _____ feet		
Surface Seal Material:	N/A - temporary monitoring well		Surface Seal Length: _____ feet from _____ feet to _____ feet		

WELL DEVELOPMENT DATA			
Well Development Date: 8/14/19	Well Development Method (check one): <input type="checkbox"/> Surge/Pump <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Compressed Air <input type="checkbox"/> Other (describe)		
Development Pump Type (check): <input checked="" type="checkbox"/> Centrifugal <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Submersible <input type="checkbox"/> Other (describe) honda pump	Depth to Groundwater (before developing in feet): 4.55 ft BLS		
Pumping Rate (gallons per minute): 4.2	Maximum Drawdown of Groundwater During Development (feet): ~0.5	Well Purged Dry (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Pumping Condition (check one): <input checked="" type="checkbox"/> Continuous <input type="checkbox"/> Intermittent	Total Development Water Removed (gallons): 55	Development Duration (minutes): 13	Development Water Drummed (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Appearance (color and odor) At Start of Development: gray-brown ; no odor		Water Appearance (color and odor) At End of Development: Clear ; no odor	

WELL CONSTRUCTION OR DEVELOPMENT REMARKS
- Temporary monitoring well location that was installed, developed, sampled, and removed within 24 hours - water level measured ft BLS, not ft BTOL - start development @ 1137 stop @ 1150

- WLM and tubing could not fit down well at some time; drawdown measured at completion of development

**Form FD 9000-24
GROUNDWATER SAMPLING LOG**

SITE NAME: FPT-Miami PBSC	SITE LOCATION: 4200 S. Congress Ave, Lake Worth, FL
WELL NO: TMW-1 (5-15) (4-14')	SAMPLE ID: TMW-1 (4-14') DATE: 8/14/2019

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: 4-14	STATIC DEPTH TO WATER (feet): 5.81	PURGE PUMP TYPE OR BAILER: PP
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable)				
= 14 feet - 4.81 feet X 04 gallons/foot = .36 gallons				

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)				
= gallons + (gallons/foot X feet) + gallons = gallons				

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8' x 7.81	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8'	PURGING INITIATED AT: 1055	PURGING ENDED AT: 1125	TOTAL VOLUME PURGED (gallons): 1.45
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TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP
1105	.5	.5	.05	-	6.75	31.16	329	1.16	44.8	clear	-77.5
1110	.25	.75	.05	-	6.76	31.30	330	0.93	32.5	clear	-81.4
1112	.10	.85	.05	-	6.76	31.35	330	0.87	28.6	clear	-83.7
1114	.10	.95	.05	-	6.76	31.76	330	0.81	24.7	clear	-81.0
1116	.10	1.05	.05	-	6.76	31.80	331	0.81	23.0	clear	-79.8
1118	.10	1.15	.05	-	6.78	31.85	332	0.80	21.3	clear	-77.1
1120	.10	1.25	.05	-	6.78	31.90	333	0.78	21.0	clear	-77.4
1122	.10	1.35	.05	-	6.78	31.95	333	0.78	19.0	clear	-80.5
1124	.10	1.45	.05	-	6.78	31.35	333	0.83	14.3	clear	-80.8

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Andrew Janeczek (Geosyntec)	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1125	SAMPLING ENDED AT: 1130
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PUMP OR TUBING DEPTH IN WELL (feet): 8'	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: Y	FILTER SIZE: _____ μm
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FIELD DECONTAMINATION: PUMP Y TUBING Y (N replaced)	DUPLICATE: Y (N)
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SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per min)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
TMW-1 (4-14')	2	PE	250	None	-	-	DFAS RCRA Metals	APP	-100

REMARKS: **Dup-2 (4-14') @ 1125**

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)
 SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump;
 RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 11. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
 2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
 pH: + 0.2 units Temperature: + 0.2 °C Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

DEP-SOP-001/01
FS 220 Groundwater Sampling

Form FD 9000-24
GROUNDWATER SAMPLING LOG

SITE NAME: Palm Beach State College (PBSC)	SITE LOCATION: 4200 South Congress Avenue, Lake Worth, FL
WELL NO: TMW-2	SAMPLE ID: TMW-2 (4-14') DATE: 8/14/19

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 4 feet to 14 feet	STATIC DEPTH TO WATER (feet): 4.51	PURGE PUMP TYPE OR BAILER: PP
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (14 ft - 4.51 ft) X 0.04 gallons/foot = 0.38				
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable) = 0.1 gallons + (— gallons/foot X — feet) + 0.1 gallons = —				

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 6.5		FINAL PUMP OR TUBING DEPTH IN WELL (feet): 6.5		PURGING INITIATED AT: 1224	PURGING ENDED AT: 1238	TOTAL VOLUME PURGED (gallons): 0.9						
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µmhos/cm or µS/cm)	OXYGEN (circle mg/L or % saturation)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)	NOTES:
1230	0.6	0.6	0.1	*	6.86	28.81	555	1.01	8.06	clear	-41.2	no odor
1232	0.1	0.7	0.1	↓	6.85	28.88	554	0.98	5.85	clear	-40.7	↓
1236	0.1	0.8	0.1	↓	6.85	28.90	554	0.93	5.20	clear	-40.7	↓
1238	0.1	0.9	0.1	↓	6.84	28.91	553	0.93	5.57	clear	-41.7	↓

8/14/19
MCI

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0028; 5/16" = 0.004; 3/8" = 0.008; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Mary Turner / Geospatial				SAMPLER(S) SIGNATURES: <i>Mary Turner</i>				SAMPLING INITIATED AT: 1240		SAMPLING ENDED AT: 1245		
PUMP OR TUBING DEPTH IN WELL (feet): 6.5				SAMPLE PUMP FLOW RATE (mL per minute):				TUBING MATERIAL CODE: HDPE				
FIELD DECONTAMINATION: Y (N)				FIELD-FILTERED: Y (N) FILTER SIZE: — µm				DUPLICATE: Y (N)				
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION				INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE		SAMPLE PUMP FLOW RATE (mL per min)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL PH*						
TMW-2 (4-14')	2	PE	250	none	—		PFAS		PP		~200	

REMARKS: * Tubing and WLM do not fit down well at same time.

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)
SAMPLING/PURGING APP = After Peristaltic Pump; B = Baller; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump
EQUIPMENT CODES: RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

NOTES: 1 The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2 STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: + 0.2 units Temperature: + 0.2 °C Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

Water Quality Instrument Calibration Form

Project/Site: Palm Beach State College (PBSC)

Project #: FR3630/01/03

Field Personnel: Andrew Januszak

Water Quality Meter - Model/Serial#: YSI 556 / 076100110

Turbidimeter - Model/Serial#: 1-1ACT1 21000

Dissolved Oxygen (FDEP SOP FT 1500)	Date	Time	Temp (°C)	Saturation (mg/L)*	Reading (mg/L)	Reading (%)	Pass or Fail
Acceptance Criteria: +/- 0.3 mg/L							
CAL ICV CCV	8/14/19	920	27.70	787	7.83	99.5	(P) F
CAL ICV CCV							P F
CAL ICV CCV							P F
CAL ICV CCV							P F
Specific Conductance (FDEP SOP FT 1200)	Date	Time	Standard Lot #	Standard Exp. Date	Standard (mS/cm)	Reading (mS/cm)	Pass or Fail
Acceptance Criteria: +/- 5%							
Specific Conductance Probe Cleaned? Yes No							
CAL ICV CCV	8/14/19	922	96A1072	1/20	1413	1419	(P) F
CAL ICV CCV							P F
CAL ICV CCV							P F
CAL ICV CCV							P F
pH (FDEP SOP FT 1100)	Date	Time	Standard Lot #	Standard Exp. Date	Standard (SU)	Reading (SU)	Pass or Fail
Acceptance Criteria: +/- 0.2 SU							
CAL ICV CCV	8/14/19	928	965364	10/20	7.00	7.01	(P) F
CAL ICV CCV							P F
CAL ICV CCV		931	965364	10/20	10.00	10.08	(P) F
CAL ICV CCV							P F
CAL ICV CCV		933	96A602	1/21	4.00	4.07	P F
CAL ICV CCV							P F
ORP (FDEP SOP N/A)	Date	Time	Standard Lot #	Standard Exp. Date	Standard (mV @ Temp °C)	Reading (mV)	Pass or Fail
Geosyntec Acceptance Criteria: +/- 5%							
Dissolved Oxygen Membrane Changed? Yes No							
CAL ICV CCV	8/14/19	935	960370	1/20	240.0	243.1	(P) F
CAL ICV CCV							P F
CAL ICV CCV							P F
CAL ICV CCV							P F

Turbidity 0.1-10 NTU	Date	Standard (NTU)	Reading (NTU)	Pass or Fail
Acceptance Criteria: +/- 10%				
CAL ICV CCV	8/14/19	10	7.84	(P) F
CAL ICV CCV				P F
CAL ICV CCV				P F
CAL ICV CCV				P F
Turbidity 11-40 NTU	Date	Standard (NTU)	Reading (NTU)	Pass or Fail
Acceptance Criteria: +/- 8%				
CAL ICV CCV	8/14/19	20	20.0	(P) F
CAL ICV CCV				P F
CAL ICV CCV				P F
CAL ICV CCV				P F
Turbidity 41-100 NTU	Date	Standard (NTU)	Reading (NTU)	Pass or Fail
Acceptance Criteria: +/- 6.5%				
CAL ICV CCV	8/14/19	100	98.3	(P) F
CAL ICV CCV				P F
CAL ICV CCV				P F
CAL ICV CCV				P F
CAL ICV CCV				P F
CAL ICV CCV				P F
Turbidity >100 NTU	Date	Standard (NTU)	Reading (NTU)	Pass or Fail
Acceptance Criteria: +/- 5%				
CAL ICV CCV	8/14/19	800	806	(P) F
CAL ICV CCV				P F
CAL ICV CCV				P F
CAL ICV CCV				P F

Notes:

CAL = Initial Calibration

ICV = Initial Calibration Verification

CCV = Continuing Calibration Verification

* See Table FS 2200-2 on the back of this form

Allow adequate time for the dissolved oxygen sensor to equilibrate during air calibration

Calibrate specific conductance using at least two standards that bracket the range of expected sample readings (unless readings <0.1 mS/cm is acceptable)

Calibrate pH using at least two standards (typ. pH 4 and 7) that bracket the range of expected sample readings; always start with pH 7; add a third calibration point if needed

If parameter fails to calibrate within SOP acceptance criteria then append sample results with a "J" qualifier

Attachment A. Daily PFAS Sampling Checklist

Date: 2/4/20

Site Name: Palm Beach State College

Weather (temperature/precipitation): 70°F, sunny

Please check all boxes that apply and describe any exceptions in the notes section below along with QA/QC methods used to assess potential sample cross-contamination as a result.

Field Clothing and PPE:

- No water- or stain-resistant clothing (e.g., GORE-TEX®)
- During collection of water and sediment samples, no water- or stain-resistant boots OR water- or stain-resistant boots covered by PFAS-free over-boots
- Field boots (or over-boots) are made of polyurethane, PVC, rubber, or untreated leather
- Waders or rain gear are made of polyurethane, PVC, vinyl, wax-coated or rubber
- Clothing has not been recently laundered with a fabric softener
- No coated HDPE suits (e.g., coated Tyvek® suits)
- Field crew has not used cosmetics, moisturizers, or other related products today
- Field crew has not used sunscreen or insect repellants today, other than products approved as PFAS-free

Field Equipment:

- Sample containers and equipment in direct contact with the sample are made of HDPE, polypropylene, silicone, acetate or stainless steel, not LDPE or glass
- Sample caps are made of HDPE or polypropylene and are not lined with Teflon™
- No materials containing Teflon™, Viton™, or fluoropolymers
- No materials containing LDPE in direct contact with the sample (e.g., LDPE tubing, Ziploc® bags)
- No plastic clipboards, binders, or spiral hard cover notebooks
- No waterproof field books
- No waterproof or felt pens or markers (e.g., certain Sharpie® products)
- No chemical (blue) ice, unless it is contained in a sealed bag
- No aluminum foil
- No sticky notes (e.g., certain Post-It® products)

Decontamination:

- Reusable field equipment (e.g., inner drill rods, samplers) decontaminated prior to reuse
- "PFAS-free" water is on-site for decontamination of field equipment
- Alconox® or Liquinox® used as decontamination detergent

Food and Drink:

- No food or drink on-site, except within staging area
- Food in staging area is contained in HDPE or stainless steel container

Notes: Soil sampling with no booties

Field Team Leader Name (Print): Andrew Galen

Field Team Leader Signature: 

Date/Time: 2/4/20 830

Attachment A. Daily PFAS Sampling Checklist

Date: 2/5/20
Site Name: Palm Beach State College
Weather (temperature/precipitation): 75°F Sunny

Please check all boxes that apply and describe any exceptions in the notes section below along with QA/QC methods used to assess potential sample cross-contamination as a result.

Field Clothing and PPE:

- No water- or stain-resistant clothing (e.g., GORE-TEX®)
- During collection of water and sediment samples, no water- or stain-resistant boots OR water- or stain-resistant boots covered by PFAS-free over-boots
- Field boots (or over-boots) are made of polyurethane, PVC, rubber, or untreated leather
- Waders or rain gear are made of polyurethane, PVC, vinyl, wax-coated or rubber
- Clothing has not been recently laundered with a fabric softener
- No coated HDPE suits (e.g., coated Tyvek® suits)
- Field crew has not used cosmetics, moisturizers, or other related products today
- Field crew has not used sunscreen or insect repellants today, other than products approved as PFAS-free

Field Equipment:

- Sample containers and equipment in direct contact with the sample are made of HDPE, polypropylene, silicone, acetate or stainless steel, not LDPE or glass
- Sample caps are made of HDPE or polypropylene and are not lined with Teflon™
- No materials containing Teflon™, Viton™, or fluoropolymers
- No materials containing LDPE in direct contact with the sample (e.g., LDPE tubing, Ziploc® bags)
- No plastic clipboards, binders, or spiral hard cover notebooks
- No waterproof field books
- No waterproof or felt pens or markers (e.g., certain Sharpie® products)
- No chemical (blue) ice, unless it is contained in a sealed bag
- No aluminum foil
- No sticky notes (e.g., certain Post-It® products)

Decontamination:

- Reusable field equipment (e.g., inner drill rods, samplers) decontaminated prior to reuse
- "PFAS-free" water is on-site for decontamination of field equipment
- Alconox® or Liquinox® used as decontamination detergent

Food and Drink:

- No food or drink on-site, except within staging area
- Food in staging area is contained in HDPE or stainless steel container

Notes: No booties needed during sampling or drilling

Field Team Leader Name (Print): Andrew Gahn

Field Team Leader Signature: 

Date/Time: 2/5/20

Attachment A. Daily PFAS Sampling Checklist

Date: 2/6/20

Site Name: Palm Beach State College

Weather (temperature/precipitation): _____

Please check all boxes that apply and describe any exceptions in the notes section below along with QA/QC methods used to assess potential sample cross-contamination as a result.

Field Clothing and PPE:

- No water- or stain-resistant clothing (e.g., GORE-TEX®)
- During collection of water and sediment samples, no water- or stain-resistant boots OR water- or stain-resistant boots covered by PFAS-free over-boots
- Field boots (or over-boots) are made of polyurethane, PVC, rubber, or untreated leather
- Waders or rain gear are made of polyurethane, PVC, vinyl, wax-coated or rubber
- Clothing has not been recently laundered with a fabric softener
- No coated HDPE suits (e.g., coated Tyvek® suits)
- Field crew has not used cosmetics, moisturizers, or other related products today
- Field crew has not used sunscreen or insect repellants today, other than products approved as PFAS-free

Field Equipment:

- Sample containers and equipment in direct contact with the sample are made of HDPE, polypropylene, silicone, acetate or stainless steel, not LDPE or glass
- Sample caps are made of HDPE or polypropylene and are not lined with Teflon™
- No materials containing Teflon™, Viton™, or fluoropolymers
- No materials containing LDPE in direct contact with the sample (e.g., LDPE tubing, Ziploc® bags)
- No plastic clipboards, binders, or spiral hard cover notebooks
- No waterproof field books
- No waterproof or felt pens or markers (e.g., certain Sharpie® products)
- No chemical (blue) ice, unless it is contained in a sealed bag
- No aluminum foil
- No sticky notes (e.g., certain Post-It® products)

Decontamination:

- Reusable field equipment (e.g., inner drill rods, samplers) decontaminated prior to reuse
- "PFAS-free" water is on-site for decontamination of field equipment
- Alconox® or Liquinox® used as decontamination detergent


Food and Drink:

- No food or drink on-site, except within staging area
- Food in staging area is contained in HDPE or stainless steel container

Notes:

NA

Field Team Leader Name (Print): Joshua Udvardy

Field Team Leader Signature: 

Date/Time: 2/2/2020 715

Attachment A. Daily PFAS Sampling Checklist

Date: 2/24/2020

Site Name: PBSC

Weather (temperature/precipitation): Cool, slightly overcast, wind SE 10-15 mph

Please check all boxes that apply and describe any exceptions in the notes section below along with QA/QC methods used to assess potential sample cross-contamination as a result.

Field Clothing and PPE:

- No water- or stain-resistant clothing (e.g., GORE-TEX®)
- During collection of water and sediment samples, no water- or stain-resistant boots OR water- or stain-resistant boots covered by PFAS-free over-boots
- Field boots (or over-boots) are made of polyurethane, PVC, rubber, or untreated leather
- Waders or rain gear are made of polyurethane, PVC, vinyl, wax-coated or rubber
- Clothing has not been recently laundered with a fabric softener
- No coated HDPE suits (e.g., coated Tyvek® suits)
- Field crew has not used cosmetics, moisturizers, or other related products today
- Field crew has not used sunscreen or insect repellants today, other than products approved as PFAS-free

Field Equipment:

- Sample containers and equipment in direct contact with the sample are made of HDPE, polypropylene, silicone, acetate or stainless steel, not LDPE or glass
- Sample caps are made of HDPE or polypropylene and are not lined with Teflon™
- No materials containing Teflon™, Viton™, or fluoropolymers
- No materials containing LDPE in direct contact with the sample (e.g., LDPE tubing, Ziploc® bags)
- No plastic clipboards, binders, or spiral hard cover notebooks
- No waterproof field books
- No waterproof or felt pens or markers (e.g., certain Sharpie® products)
- No chemical (blue) ice, unless it is contained in a sealed bag
- No aluminum foil
- No sticky notes (e.g., certain Post-It® products)

Decontamination:

- Reusable field equipment (e.g., inner drill rods, samplers) decontaminated prior to reuse
- "PFAS-free" water is on-site for decontamination of field equipment
- Alconox® or Liquinox® used as decontamination detergent

Food and Drink:

- No food or drink on-site, except within staging area
- Food in staging area is contained in HDPE or stainless steel container

Notes:

Field Team Leader Name (Print): JJ. Hallingsford

Field Team Leader Signature: [Signature]

Date/Time: 2/24/2020

Attachment A. Daily PFAS Sampling Checklist

Date: 2/25/2020

Site Name: Palm Beach State College

Weather (temperature/precipitation): High/Low (F) = 81/20

Please check all boxes that apply and describe any exceptions in the notes section below along with QA/QC methods used to assess potential sample cross-contamination as a result.

Field Clothing and PPE:

- No water- or stain-resistant clothing (e.g., GORE-TEX®)
- During collection of water and sediment samples, no water- or stain-resistant boots OR water- or stain-resistant boots covered by PFAS-free over-boots
- Field boots (or over-boots) are made of polyurethane, PVC, rubber, or untreated leather
- Waders or rain gear are made of polyurethane, PVC, vinyl, wax-coated or rubber
- Clothing has not been recently laundered with a fabric softener
- No coated HDPE suits (e.g., coated Tyvek® suits)
- Field crew has not used cosmetics, moisturizers, or other related products today
- Field crew has not used sunscreen or insect repellants today, other than products approved as PFAS-free

Field Equipment:

- Sample containers and equipment in direct contact with the sample are made of HDPE, polypropylene, silicone, acetate or stainless steel, not LDPE or glass
- Sample caps are made of HDPE or polypropylene and are not lined with Teflon™
- No materials containing Teflon™, Viton™, or fluoropolymers
- No materials containing LDPE in direct contact with the sample (e.g., LDPE tubing, Ziploc® bags)
- No plastic clipboards, binders, or spiral hard cover notebooks
- No waterproof field books
- No waterproof or felt pens or markers (e.g., certain Sharpie® products)
- No chemical (blue) ice, unless it is contained in a sealed bag
- No aluminum foil
- No sticky notes (e.g., certain Post-It® products)

Decontamination:

- Reusable field equipment (e.g., inner drill rods, samplers) decontaminated prior to reuse
- "PFAS-free" water is on-site for decontamination of field equipment
- Alconox® or Liquinox® used as decontamination detergent

~~July 2019~~
February 2020
②

Food and Drink:

- No food or drink on-site, except within staging area
- Food in staging area is contained in HDPE or stainless steel container

Notes:

N/A

Field Team Leader Name (Print): Joshua Uduardy

Field Team Leader Signature: 

Date/Time: 2/25/2020

Attachment A. Daily PFAS Sampling Checklist

Date: 2/26/2020

Site Name: Palm Beach State College

Weather (temperature/precipitation): High/Low (F) = 88/75, afternoon lightning

Please check all boxes that apply and describe any exceptions in the notes section below along with QA/QC methods used to assess potential sample cross-contamination as a result.

Field Clothing and PPE:

- No water- or stain-resistant clothing (e.g., GORE-TEX®)
- During collection of water and sediment samples, no water- or stain-resistant boots OR water- or stain-resistant boots covered by PFAS-free over-boots
- Field boots (or over-boots) are made of polyurethane, PVC, rubber, or untreated leather
- Waders or rain gear are made of polyurethane, PVC, vinyl, wax-coated or rubber
- Clothing has not been recently laundered with a fabric softener
- No coated HDPE suits (e.g., coated Tyvek® suits)
- Field crew has not used cosmetics, moisturizers, or other related products today
- Field crew has not used sunscreen or insect repellants today, other than products approved as PFAS-free

Field Equipment:

- Sample containers and equipment in direct contact with the sample are made of HDPE, polypropylene, silicone, acetate or stainless steel, not LDPE or glass
- Sample caps are made of HDPE or polypropylene and are not lined with Teflon™
- No materials containing Teflon™, Viton™, or fluoropolymers
- No materials containing LDPE in direct contact with the sample (e.g., LDPE tubing, Ziploc® bags)
- No plastic clipboards, binders, or spiral hard cover notebooks
- No waterproof field books
- No waterproof or felt pens or markers (e.g., certain Sharpie® products)
- No chemical (blue) ice, unless it is contained in a sealed bag
- No aluminum foil
- No sticky notes (e.g., certain Post-It® products)

Decontamination:

- Reusable field equipment (e.g., inner drill rods, samplers) decontaminated prior to reuse
- "PFAS-free" water is on-site for decontamination of field equipment
- Alconox® or Liquinox® used as decontamination detergent

~~July 2019~~
February 2020
(D)

Food and Drink:

- No food or drink on-site, except within staging area
- Food in staging area is contained in HDPE or stainless steel container

Notes:

VA

Field Team Leader Name (Print): Joshua Udvardy

Field Team Leader Signature: 

Date/Time: 2/26/2020

Attachment A. Daily PFAS Sampling Checklist

Date: 2/27/2020

Site Name: Palm Beach State College

Weather (temperature/precipitation): High/Low (F) = 70/61

Please check all boxes that apply and describe any exceptions in the notes section below along with QA/QC methods used to assess potential sample cross-contamination as a result.

Field Clothing and PPE:

- No water- or stain-resistant clothing (e.g., GORE-TEX®)
- During collection of water and sediment samples, no water- or stain-resistant boots OR water- or stain-resistant boots covered by PFAS-free over-boots
- Field boots (or over-boots) are made of polyurethane, PVC, rubber, or untreated leather
- Waders or rain gear are made of polyurethane, PVC, vinyl, wax-coated or rubber
- Clothing has not been recently laundered with a fabric softener
- No coated HDPE suits (e.g., coated Tyvek® suits)
- Field crew has not used cosmetics, moisturizers, or other related products today
- Field crew has not used sunscreen or insect repellants today, other than products approved as PFAS-free

Field Equipment:

- Sample containers and equipment in direct contact with the sample are made of HDPE, polypropylene, silicone, acetate or stainless steel, not LDPE or glass
- Sample caps are made of HDPE or polypropylene and are not lined with Teflon™
- No materials containing Teflon™, Viton™, or fluoropolymers
- No materials containing LDPE in direct contact with the sample (e.g., LDPE tubing, Ziploc® bags)
- No plastic clipboards, binders, or spiral hard cover notebooks
- No waterproof field books
- No waterproof or felt pens or markers (e.g., certain Sharpie® products)
- No chemical (blue) ice, unless it is contained in a sealed bag
- No aluminum foil
- No sticky notes (e.g., certain Post-It® products)

Decontamination:

- Reusable field equipment (e.g., inner drill rods, samplers) decontaminated prior to reuse
- "PFAS-free" water is on-site for decontamination of field equipment
- Alconox® or Liquinox® used as decontamination detergent

~~July 2019~~

February 2020



Food and Drink:

- No food or drink on-site, except within staging area
- Food in staging area is contained in HDPE or stainless steel container

Notes:

NA

Field Team Leader Name (Print): Joshua Udvardy

Field Team Leader Signature: 

Date/Time: 2/7/2020

Attachment A. Daily PFAS Sampling Checklist

Date: 2/28/2020

Site Name: Palm Beach State College

Weather (temperature/precipitation): High/Low (F) = 68/54

Please check all boxes that apply and describe any exceptions in the notes section below along with QA/QC methods used to assess potential sample cross-contamination as a result.

Field Clothing and PPE:

- No water- or stain-resistant clothing (e.g., GORE-TEX®)
- During collection of water and sediment samples, no water- or stain-resistant boots OR water- or stain-resistant boots covered by PFAS-free over-boots
- Field boots (or over-boots) are made of polyurethane, PVC, rubber, or untreated leather
- Waders or rain gear are made of polyurethane, PVC, vinyl, wax-coated or rubber
- Clothing has not been recently laundered with a fabric softener
- No coated HDPE suits (e.g., coated Tyvek® suits)
- Field crew has not used cosmetics, moisturizers, or other related products today
- Field crew has not used sunscreen or insect repellants today, other than products approved as PFAS-free

Field Equipment:

- Sample containers and equipment in direct contact with the sample are made of HDPE, polypropylene, silicone, acetate or stainless steel, not LDPE or glass
- Sample caps are made of HDPE or polypropylene and are not lined with Teflon™
- No materials containing Teflon™, Viton™, or fluoropolymers
- No materials containing LDPE in direct contact with the sample (e.g., LDPE tubing, Ziploc® bags)
- No plastic clipboards, binders, or spiral hard cover notebooks
- No waterproof field books
- No waterproof or felt pens or markers (e.g., certain Sharpie® products)
- No chemical (blue) ice, unless it is contained in a sealed bag
- No aluminum foil
- No sticky notes (e.g., certain Post-It® products)

Decontamination:

- Reusable field equipment (e.g., inner drill rods, samplers) decontaminated prior to reuse
- "PFAS-free" water is on-site for decontamination of field equipment
- Alconox® or Liquinox® used as decontamination detergent

~~July 2019~~
February 2020
(D)

Food and Drink:

- No food or drink on-site, except within staging area
- Food in staging area is contained in HDPE or stainless steel container

Notes:

NA

Field Team Leader Name (Print): Joshua Udeardy

Field Team Leader Signature: 

Date/Time: 2/28/2020

Attachment A. Daily PFAS Sampling Checklist

Date: 2/29/2020

Site Name: Palm Beach State College

Weather (temperature/precipitation): High/Low (F) → 2/52

Please check all boxes that apply and describe any exceptions in the notes section below along with QA/QC methods used to assess potential sample cross-contamination as a result.

Field Clothing and PPE:

- No water- or stain-resistant clothing (e.g., GORE-TEX®)
- During collection of water and sediment samples, no water- or stain-resistant boots OR water- or stain-resistant boots covered by PFAS-free over-boots
- Field boots (or over-boots) are made of polyurethane, PVC, rubber, or untreated leather
- Waders or rain gear are made of polyurethane, PVC, vinyl, wax-coated or rubber
- Clothing has not been recently laundered with a fabric softener
- No coated HDPE suits (e.g., coated Tyvek® suits)
- Field crew has not used cosmetics, moisturizers, or other related products today
- Field crew has not used sunscreen or insect repellants today, other than products approved as PFAS-free

Field Equipment:

- Sample containers and equipment in direct contact with the sample are made of HDPE, polypropylene, silicone, acetate or stainless steel, not LDPE or glass
- Sample caps are made of HDPE or polypropylene and are not lined with Teflon™
- No materials containing Teflon™, Viton™, or fluoropolymers
- No materials containing LDPE in direct contact with the sample (e.g., LDPE tubing, Ziploc® bags)
- No plastic clipboards, binders, or spiral hard cover notebooks
- No waterproof field books
- No waterproof or felt pens or markers (e.g., certain Sharpie® products)
- No chemical (blue) ice, unless it is contained in a sealed bag
- No aluminum foil
- No sticky notes (e.g., certain Post-It® products)

Decontamination:

- Reusable field equipment (e.g., inner drill rods, samplers) decontaminated prior to reuse
- "PFAS-free" water is on-site for decontamination of field equipment
- Alconox® or Liquinox® used as decontamination detergent

~~July 2019~~
February 2020
(2)

Food and Drink:

- No food or drink on-site, except within staging area
- Food in staging area is contained in HDPE or stainless steel container

Notes:

NA

Field Team Leader Name (Print): Joshua Odrady

Field Team Leader Signature: 

Date/Time: 2/29/2020

Attachment A. Daily PFAS Sampling Checklist

Date: 3/4/20

Site Name: PBSC

Weather (temperature/precipitation): 80°F, Sunny

Please check all boxes that apply and describe any exceptions in the notes section below along with QA/QC methods used to assess potential sample cross-contamination as a result.

Field Clothing and PPE:

- No water- or stain-resistant clothing (e.g., GORE-TEX®)
- During collection of water and sediment samples, no water- or stain-resistant boots OR water- or stain-resistant boots covered by PFAS-free over-boots
- Field boots (or over-boots) are made of polyurethane, PVC, rubber, or untreated leather
- Waders or rain gear are made of polyurethane, PVC, vinyl, wax-coated or rubber
- Clothing has not been recently laundered with a fabric softener
- No coated HDPE suits (e.g., coated Tyvek® suits)
- Field crew has not used cosmetics, moisturizers, or other related products today
- Field crew has not used sunscreen or insect repellants today, other than products approved as PFAS-free

Field Equipment:

- Sample containers and equipment in direct contact with the sample are made of HDPE, polypropylene, silicone, acetate or stainless steel, not LDPE or glass
- Sample caps are made of HDPE or polypropylene and are not lined with Teflon™
- No materials containing Teflon™, Viton™, or fluoropolymers
- No materials containing LDPE in direct contact with the sample (e.g., LDPE tubing, Ziploc® bags)
- No plastic clipboards, binders, or spiral hard cover notebooks
- No waterproof field books
- No waterproof or felt pens or markers (e.g., certain Sharpie® products)
- No chemical (blue) ice, unless it is contained in a sealed bag
- No aluminum foil
- No sticky notes (e.g., certain Post-It® products)

Decontamination:


- Reusable field equipment (e.g., inner drill rods, samplers) decontaminated prior to reuse
- "PFAS-free" water is on-site for decontamination of field equipment
- Alconox® or Liquinox® used as decontamination detergent

Food and Drink:

- No food or drink on-site, except within staging area
- Food in staging area is contained in HDPE or stainless steel container

Notes: FDEP does not wear booties, but Andrew (Geosyntec) wears
booties

Field Team Leader Name (Print): Andrew Galun

Field Team Leader Signature: 

Date/Time: 3/4/20 805

PROJECT NAME: Palm Beach State College DATE: 2/4/20
LOCATION: Lake worth, FL PROJECT NO: FR36308 PHASE NO: 01
DESCRIPTION: utility locate, soil sampling
SUBCONTRACTOR(S): Geotek
WEATHER: sunny, high of 78°F
GEOSYNTec PERSONNEL: Amy DeSantis (AD), Andrew Galvin (AG),
Josh Udvardy (JU) + JJ Hollingshead (JH)

740 AD onsite.
745 AG onsite.
755 JU onsite. ~~A~~ JH onsite.
805 Meet FDEP + Bud Connor of Geotek. ^{chief} Kerry Weiss of PBSC states no active drills will be going on in our sampling area today although staff will be in + out of area.
Conduct H+S tailgate, review scope, + PFAS daily checklist.
835 Geotek AD AG + JU go to locate borings + mark utilities. JH + AD set up decontamination stations.
900 Claude Edwards of PBSC brings copies of as-builts with utilities. Discuss staging location of IDW drums - they will identify a location for us.
915 K. Weiss identifies NW corner of training lot for IDW staging on asphalt - 2 ~~to~~ E-W rows of up to 25 drums.
925 Sample EQD-4 is collected off hand auger prior to sampling SB-12. Mobilize to SB-12. Refer to sample summary table.
1030 AD discusses boring + well locations with JU + Geotek. AD AG + JH continue soil sampling.
1045 AD offsite.

Field Activities Record Form



Project Name Palm Beach State College (PBSC)

Site Location Lake Worth, FL Project/Task Number FR3630B

Type of Work Soil Sampling Date 2/04/2020

Field Personnel Amy DeSantis, Andrew Galvin, Josh Edwards, JJ Hollingshead, Dennis

Contractors Jensen (FDEP), Bobby Williams (FDEP), Bud Connor (Geotek)

Time	Notes:
0800	All field personnel meet at site (Fire Training Area, PBSC, 4200 S. Congress Ave., Lakelworth, FL)
0815	Tailgate safety meeting, review PPARS checklist, review SOW
0830	BC begins utility locate, DJ & BW set up decon station, REMAINING personnel unload equipment
0845	Discuss site details with Cary Weiss & Claude Edward of PBSC; decon hand augers; discuss staging area for IDW drums; collect EGB-4 off of hand augers
0930	Advance SB-12 to 5ft bls; decon hand augers
1015	Advance SB-13 to 5ft bls; decon hand augers
1040	Advance SB- 14 ¹⁴ to 5ft bls; decon hand augers
1100	Advance SB- 14 ¹⁴ to 5ft bls; decon hand augers
1125	Advance SB-15 to 5ft bls; decon hand augers
1137	Advance SB-16 to 5ft bls; decon hand augers
1155	Advance SB-17 to 5ft bls; decon hand augers
1215	lunch
1250	Advance SB-19 to 3ft bls; decon hand augers
1320	Advance SB-22 to 5ft bls; decon hand augers
1340	Advance SB-2 to 5ft bls; decon hand augers
1355	Advance SB-1 to 5ft bls; decon hand augers
1415	Advance SB-3 to 5ft bls; decon hand augers
1445	Advance SB-4 to 5ft bls;

Field Activities Record Form



Project Name Palm Beach State College (PASC)

Site Location Lake Worth, FL

Project/Task Number FR3630B

Type of Work Soil sampling

Date 2/04/2020

Field Personnel See p.1

Contractors Geotek

Time	Notes:
------	--------

1510	Advance SB-5 to 5 ft bls; decon hand augers
1540	Advance SB-18 to 5 ft bls; decon hand augers
1605	perform final QA/QC for COC; load equipment
1635	exit site

NFE
JA

Field Activities Record Form



Geosyntec
consultants

Site Location 4200 S Congress Ave / Lake Worth Project Name Palm Beach State College (PBSC)
 Type of Work Soil sampling Project/Task Number FR3630B
 Date 2/4/2020
 Field Personnel Joshua Vancich, Andrew Galvin, J.S. Hollingshead, FDEP
 Contractors NA

Time	Notes:
------	--------

755	Arrive at site, A. Galvin onsite
800	Amy Desantis arrives at site
815	A. Galvin / A. Desantis conduct final safety
830	Begin locating boring locations w/ Geotek
1030	Finish locating borings w/ Geotek, begin hand auguring w/ A. Galvin, see soil sampling forms
1230	Stop for lunch
1245	continue soil sampling
1600	begin cleaning up, checking chain of custody
1635	FDEP and Geosyntec personnel decontaminate from site
1705	Arrive back at office

Field Activities Record Form



Project Name Palm Beach State College (PBSC)

Site Location

4200 S Congress Ave, Lake Worth

Project/Task Number FR3630B

Type of Work

HSA well installations

Date

2/5/2020

Field Personnel

Joshua Ucharcy, Andrew Galvin, JJ Hollingshead, FDEP

Contractors

PDS

Time	Notes:
720	Mobilize to site in light duty truck
800	Arrive at site, Andrew Galvin and FDEP onsite
805	JJ Hollingshead arrives at site
c	Conduct tailgate safety meeting
900	PDS arrives, begin decan pit construction
1040	PDS begins clearing DEP MW-8
1200	PDS complete install of DEP MW-8, takes 15-min lunch break
	JJ Hollingshead demobilizes from site
1230	PDS decan equipment
1245	PDS begins clearing DEP MW-1
1325	PDS begins DEP MW-1 well pad, decan equipment
	A Galvin demobilizes from site
1400	PDS completes DEP MW-5 well installation
1420	PDS begins clearing DEP MW-2
1500	PDS completes installing DEP MW-2
1515	PDS begins clearing DEP MW-2
1615	PDS completes installing DEP MW-7, begins well pad
1620	PDS sets well pad for DEP MW-2, begin cleaning up
1710	PDS, FDEP demobilizes from site
1715	Demobilize from site
1838	Arrive at home

Field Activities Record Form



Project Name Palm Beach State College (PBSC)

Site Location Palm Beach State College

Project/Task Number FR3630B

Type of Work Soil sampling

Date 2/5/20

Field Personnel Andrew Galum, JT Hollingshead, Josh Urdardy

Contractors _____

Time	Notes:
------	--------

715 Andrew leaves home

745 Andrew arrives on site

800 Safety/Kickoff meeting with Dennis and Bobby from FOEP and JT and Josh from Geosyntec

830 Andrew and JT set up for soil sampling, see soil logs for details.

1300 Andrew and JT finish soil sampling and JT demobs from site. Andrew starts GPS locating all boring/sampling locations.

1400 Andrew finishes GPS locating and demobs

1430 Andrew leaves site

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Field Activities Record Form



Project Name Palm Beach State College (PBSC)

Site Location 4200 S Congress Ave, Lake Worth Project/Task Number FR3630B
 Type of Work HSA well installation Date 2/6/20
 Field Personnel Dariusz Udrzdy, FDEP
 Contractors PPS

Time	Notes:
600	Mobilize to site on light duty truck
700	Arrive at site, PDS already onsite
705	Conduct tailgate safety, PDS begins decont equipment
720	PDS begins staging soil drums from previous day
735	FDEP arrives onsite
800	begin PDS begins clearing DEPMW-8
808	PDS begins developing DEPMW-1, stops at 855
855 900	PDS completes installing DEPMW-6
920	FDEP develops DEPMW-5, stops at 955
930	PDS starts clearing DEPMW-4
1005	Stop work because of proximity to utility, wait for Amy Resan to call back
1035	Amy calls, will move over 1 ft, FDEP checks in on well development lines, see well installation logs
1110	PDS completes installing DEPMW-4
1130	PDS begins to hand clear DEPMW-3
1230	PDS completes installing DEPMW-3
1245	FDEP demobilizes from site
1250	PDS starts developing DEPMW-2, stops at 1305
1320	PDS starts developing DEPMW-4, stops at 1400
1410	PDS starts developing DEPMW-8, stops at 1435

Field Activities Record Form



Project Name Palm Beach State College (PBSC)

Site Location 4200 S Congress Ave, Lake Worth

Project/Task Number FR3630B

Type of Work So² HSA well installations

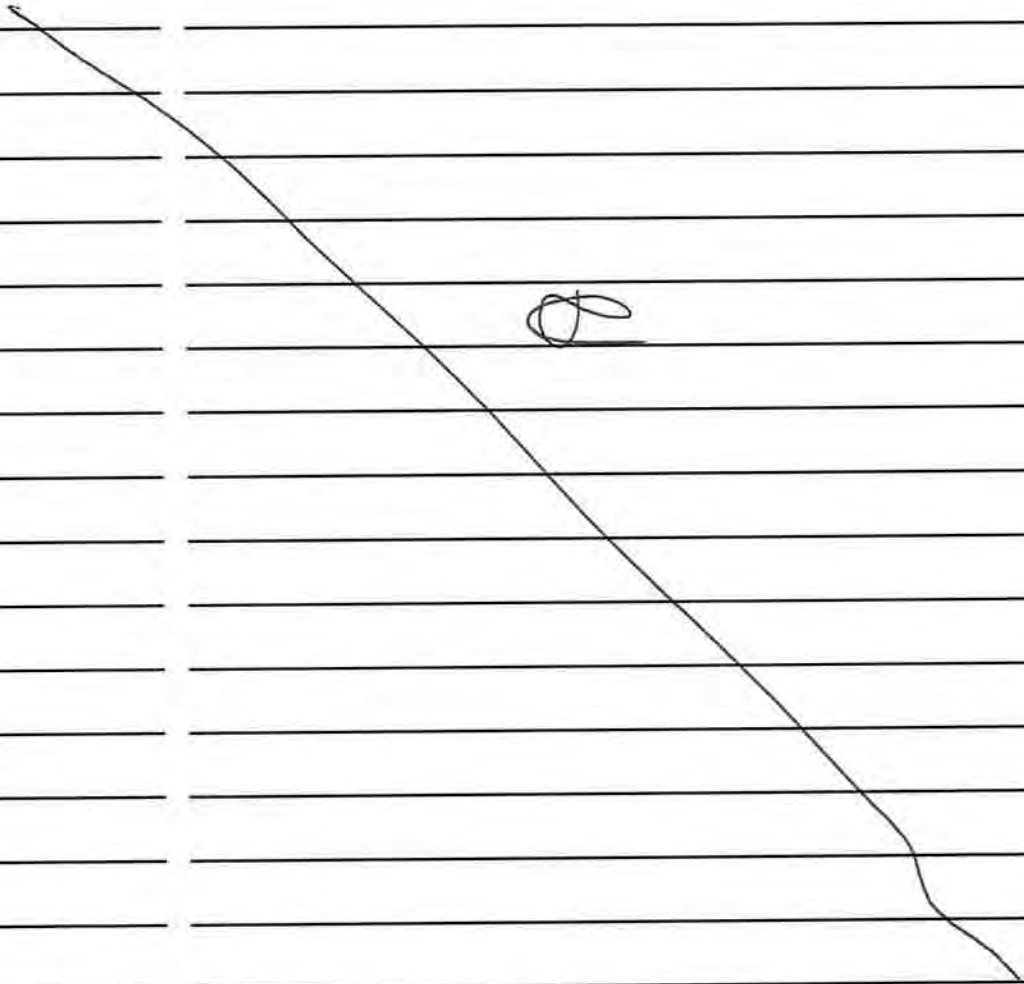
Date 2/6/2020

Field Personnel Joshua Udvardy, FDEP

Contractors PDS

Time	Notes:
------	--------

1445	PDS completes grouting all wells
1520	PDS completes cleanup, demobilizes from site
1535	complete dump log
1540	Call Amy Desantis, demobilize from site
1605	Stop to get gas for vehicle
1615	Arrive at Boca Office



Field Activities Record Form



Project Name Palm Beach State College (PBSC)

Site Location PBSC Project/Task Number FR3630B
 Type of Work Monitoring Well Installation Date 2/24/2020
 Field Personnel Geosyntec - JJ. H. Kingshead (JH) & Josh Uduardy (JU)
 Contractors Geotek, Cascade PDS Geoprobe 8140LS

Time	Notes:
0830	JH, JU arrive at site (4000 S. Congress Ave., Lake Worth, FL); review scope of work, conduct tailgate safety meeting; Geotek conducts utility locate
0930-1015	trucks with drilling equipment arrive
1030	review scope of work, site layout, conduct tailgate safety meeting
1045	Cascade unloads equipment, constructs decon pit
1150	Geotek completes utility locate, exits site
1200 -1315:	Cascade leaves site to pick up supplies
1315	continue unloading/setting up equipment
1400	begin deconning equipment
1450	begin advancing DEP MW-13 (hand auger)
1530	begin advancing DEP MW-13 (sonic); 100 ft core barrel; 100 ft 6-inch override casing; 75 ft 8-inch casing
1830	stop drilling; TD = 102 ft b/c, still in silty sand; agree to reevaluate tomorrow
1850	exit site
	Note: FDEP arrives at 1555

Field Activities Record Form

Geosyntec
consultants

Project Name Palm Beach State College (PBSC)

Site Location PBSC

Project/Task Number FR3630B

Type of Work monitoring well installation

Date 2/25/2020

Field Personnel Joshua Utkerdy, JJ Hollingshead

Contractors PDS

Time	Notes:
700	Mobilize to site in light duty truck
725	Arrive at site, FDEP + PDS onsite
745	Conduct tailgate safety, PDS continues work DEP MMW-13.
830	Based on discussion w/ Eric Seeger and FDEP, will wait for more 4" piping for DEPMMW-13 once ready currently work is advanced
1000 45	Advance drill rod (4") to 108', will no longer wait for additional drill rod to advance further for DEPMMW-13
1145	PDS has plug ~80', trying to clear out
1225	Stop for lunch , PDS pushes sand back down to 105', will get gravel to put in bottom of borehole, JJ Hollingshead mobilizes to Home depot to get gravel
1310	JJ arrives back onsite w/ gravel, PDS begins setting DEPMMW-13
1330	Extra rod for rig angles
1400	set bentonite, wait to hydrate/break for lunch (PDS)
1500	PDS arrives back onsite
1530	Finish checking if DEPMMW-13 will recharge (will), need to decom equipment, will purge DEPMMW-13 tomorrow

Field Activities Record Form



Project Name Palm Beach State College (PBC)

Site Location PBSC

Project/Task Number FR3630B

Type of Work sonar well installs

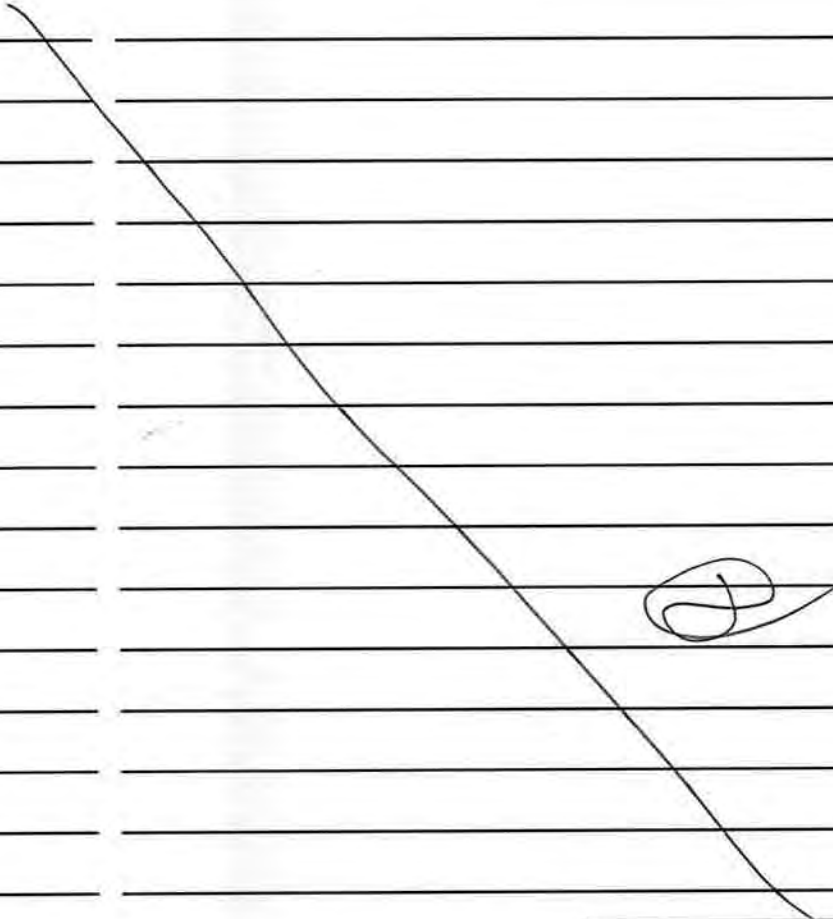
Date 2/25/2020

Field Personnel Joshua Udvordy, JJ

Contractors PDS

Time	Notes:
------	--------

1600	Mobilize to DEP MW-9
1640	Begin hand clearing DEP MW-9 (PDS)
1715	Pause to wait for decom of drill rods
1845	Advance to 50', stop work
1850	FDEP demobilizes from site
1915	TS Hollingshead,
2000	Arrive at home



Field Activities Record Form



Project Name Palm Beach State College (PBSC)

Site Location PBSC

Project/Task Number FR3630B

Type of Work Spine well installation

Date 2/26/2020

Field Personnel Joshua Urvady, JJ Hollingshead, Andrew Galvin.

Contractors PDS

Time	Notes:
605	Mobilize from home in light duty truck
710	Arrive at site
730	FDEP, JJ Hollingshead, PDS on site
740	Conduct tailgate safety
750	Continue advancing at DEPMW-9
810	JJ Hollingshead checks DEPMW-13, water level at 4.25 ft BTC
835	Andrew Galvin arrives onsite
840	PDS blows hose on rig
850	PDS calls tech company, will be at site around 10 to fix hoses
1000	Pirtlek (hose repair) arrives
1045	Continue advancing DEPMW-9.
1105	Pause work to fix another hose
1110	PDS personnel with PFAS-free water (total of 7 tires of water onsite) arrives
1120	Continue to advance DEPMW-9
1135	Andrew Galvin demobilizes from site
1220	6" casing falls in borehole, PDS attempts to retrieve it, successful at 1250
1255	4" casing comes out of hole w/ 6" casing
1340	JJ H. talks to driller, 4" casing stuck in hole, have a problem, PDS will lift 6" to blow loose back down hole,

Field Activities Record Form



Project Name Palm Beach State College (PBSC)

Site Location PBSC

Project/Task Number FR3630B

Type of Work sonar well installation

Date 2/26/2020

Field Personnel Joshua Udvardy, JS Hollingshead

Contractors PDS

Time	Notes:
------	--------

1340 (cont)	then retrieve 4" casing
1350	Talk to Amy ReSantis on phone to give update
1430	PDS except lead driller (Eric) go on lunch break
1515	PDS arrives back onsite, stop work due to lightning, PDS cannot retrieve 60' of 4" casing from hole, PDS will get parts manufactured to attempt to retrieve piping in the morning
1530	FDEP, PDS demobilizes from site
1545	Call Eric Sager with JS Hollingshead. E. Sager will discuss with FDEP about scope of work and possible changes for next three days due to delays in the field
1600	JS Hollingshead, J Udvardy demobilize from site
1645	Stop for gas for vehicle
1700	Arrive at office

Field Activities Record Form



Project Name Palm Beach State College (PBSC)

Site Location PBSC

Project/Task Number FR3630B

Type of Work sonic well installation

Date 2/27/2020

Field Personnel Joshua Udeorly

Contractors PDS

Time	Notes:
------	--------

700 Arrive at office, mobilize to site in light duty truck

730 Arrive at site, FDEP also on site, PDS will be onsite around 8 after picking up a part

745 Call E Sager

805 PDS arrives onsite, call Eric Sager w/ Dennis from FDEP to discuss scope for rest of the week, will review more after progress on retrieving drill rods in DEPMW-¹⁰ borehole

820 Conduct tailgate safety, problems w/ drill rig currently: 60' of 4" drill rod stuck in hole, 4" rod stuck to 6" rod, rig itself is off-center; possible solution: PDS manufactured parts to prevent lower will drill 8" casing to keep hole open, try to center drill rig

907 Start developing DEPMW-⁹ (stop at 1003)

1010 Talk Eric Sager on phone to give update, PDS said it will take approximately 2-3 hrs to retrieve drill rods if everything goes correctly

1035 Update: 80 ft of 8" casing advanced

Field Activities Record Form

Geosyntec
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Project Name Palm Beach State College (PBSC)

Site Location PBSC

Project/Task Number FR3630B

Type of Work sonar well installation

Date 2/27/2020

Field Personnel Joshua Ubiard

Contractors PDS

Time	Notes:
1100	PDS personnel arrives with 4 tubes of water
1115	Speak with Dennis and PDS about updated scope of work
1135	PDS retrieves 10' of 4" rod, threads are broken, 50' of 4-inch rod still in hole
1230	All 4" rods retrieved from borehole, PDS breaks for lunch
1400	PDS arrives back on-site, continue advancing DEPMW-10
1520	Update: 120' 120' of 4" and 110' of 6" currently in borehole, with 90' of 8" drill rod
1630	4" rods advanced to 143' (did not advance to 150' in fear of possibly losing rod in hole), begin to pull core samples
1715	Speak w/ Eric Sager and FDEP (Dennis) on phone, no limestone found, per FDEP well will be set at 105' (DEPMW-10)
1820	Call Eric Sager to give update, well is sinking as drill rods are pulled up
1800	Call Amy DeSantis to give update
1855	Stop work, benchite chips in borehole, well at 105'

Field Activities Record Form



Project Name Palm Beach State College (PBSC)

Site Location

PBSC

Project/Task Number FR3630B

Type of Work

sonic well installations

Date

2/27/2020

Field Personnel

Joshua Udrandy

Contractors

PDS

Time	Notes:
------	--------

1855

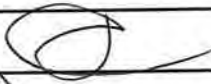
PDS, FDEP demobilizes from site

1900

demobilize from site

2000

Arrive at home



Field Activities Record Form



Project Name Palm Beach State College (PBSC)

Site Location PBSC Project/Task Number FR3630B
 Type of Work sonic well installation Date 2/28/2020
 Field Personnel Joshua Uderdy
 Contractors PDS

Time	Notes:
615	Mobilize to site in light duty truck
720	Arrive at site
725	FDEP arrives onsite
730	PDS arrives onsite
740	Conduct tailgate safety meeting, begin grinding DEPMW-10 and decan of 4" rods
830	All rods out of DEPMW-10 bucket (grouted)
900	Pause work to fix steel cable on rig
930	Steel cable fixed, continue staging to DEPMW-11
955	Personnel from PDS demobilize to get stuff from hotel, as it is overbooked and they need to find a new one, two personnel stay behind to complete decan of equipment
1045	Call Eric from PDS, will be back in 20-30 mins, other personnel finished w/ decan of equipment, start to bring gun decan pit to DEPMW-11
1100	PDS arrives back onsite
1125	Posthole clearing complete, begin advancing on DEPMW-11
1235	Army DeSan his arrives onsite, break for lunch
1330	Resume work, blow down to 65' to set well, Army DeSan his demobilizes from site

Field Activities Record Form

Geosyntec[®]
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Project Name Palm Beach State College (PBSC)

Site Location PBSC

Project/Task Number FR3630B

Type of Work semi well installation

Date 2/22/2020

Field Personnel Joshua Urdady

Contractors PDS

Time	Notes:
615	mobilize to site on light duty truck
705	Arrive at site
710	FDEP arrives onsite
750	PDS arrives at site
755	Conduct tailgate safety meeting, PDS begins to decan rods and post hole at DEPMW-13 while permit is made for DEPMW-12
840	Complete grouting DEPMW-12, stage to DEPMW-13
915	Denaro from FDEP demobilize from site, rig engine not working
1000	Finish decan of equipment
1030	Drill rig still not working (wiring), begin morning discussion w/ Erin Seger
1130	PDS still repairing drill rig, setting well pad at DEPMW-11 and staging drum
1225	Drill rig fixed, begin advancing DEPMW-13
1315	Pause work, rig not working
1540	After hardware chips hydraulic, DEPMW-13 granted, drill rig stopped working multiple times
1635	Discussion about who sets well pad, call Erin Seger

DAILY FIELD REPORT

Project Name: PBSC Date: 3/4/20 Page 1 of 1
 Project Number: FR3630B Primary Activities: Groundwater sampling (PFAS)
 Field Personnel: Andrew Gelman (Geosyntec),
Dennis and Mary (FDEP)
 Recorded By: Andrew Gelman
 Weather: 90°F, Sunny

Time	Description of activities - location of work, work performed, equipment & personnel used, incidental information
720	Andrew Gelman (AG) arrives on site
740	Dennis and Mary arrive on site
800	AG holds safety/tieoff meeting
820	AG begins depth for water measurements at wells on site.
	Depth to water measurements from TOC recorded below:
	DEPMW-7 → 4.03' TOC
	DEPMW-12 → 2.54' TOC
	DEPMW-9 → 2.76' TOC
	DEPMW-13 → 4.21' TOC
	DEPMW-6 → 4.37' TOC
	DEPMW-1 → 4.27' TOC
	DEPMW-8 → 5.24' TOC
	DEPMW-4 → 4.88' TOC
	DEPMW-10 → 2.39' TOC
	DEPMW-3 → 2.44' TOC
	DEPMW-11 → 2.60' TOC
	DEPMW-5 → 4.69' TOC
	DEPMW-2 → 3.09' TOC
1000	AG sets up on DEPMW-17, see purge form
1030	AG calibrates YSI and calibration check's turbidity meter, see calibration form
1210	AG sets up on DEPMW-9, see purge form
1335	AG sets up on DEPMW-13, see purge form
1445	AG sets up on DEPMW-10, see purge form
1535	AG sets up on DEPMW-11, see purge form
1645	FDEP head off site. AG labels drums and bolts down wells.
1740	AG conducts calibration check on YSI and turbidity meter, see cal form
1830	All personnel off site

Daily Field Report

**Table 1: Sampling Work Plan
Palm Beach State College**

Rationale	Location ID	Sample ID	Date/Time	Matrix	Depth (ft BLS)	Sample Method	Comments
Delineation Sampling	SB-1	SB-1 (2-4')	2/4/20 1400	Soil	2-4	HA	fine sand with some silt, dark brown/black, moist, loose, some brick and rock pieces
		SB-1 (4-5') S	2/4/20 1404		4-5' S		fine sand with some silt, gray, moist/wet, loose, water encountered at 5' b/s
	SB-2	SB-2 (2-4')	2/4/20 1350		2-4		fine sand with some silt, gray with some reddish brown, moist, loose, some roots
		SB-2 (4-5') S	2/4/20 1352		4-5' S		fine sand with some silt, light and dark gray/brown, moist/wet, loose, water encountered at 5' b/s
	SB-3	SB-3 (0-0.5')	2/4/20 1415		0-0.5		fine sand with some silt, dark brown/black, moist, loose, some vegetation and rock pieces throughout
		SB-3 (0.5-2')	2/4/20 1417		0.5-2		fine sand with some silt, dark brown/black, moist, loose, some brick and rocks throughout
		SB-3 (2-4')	2/4/20 1419		2-4		fine sand with some silt, reddish brown/gray and black, moist, loose,
		SB-3 (4-5') S	2/4/20 1421		4-5' S		fine sand with some silt, gray, moist/wet, loose, water encountered at 5' b/s

← with some gray and reddish brown

**Table 1: Sampling Work Plan
Palm Beach State College**

Rationale	Location ID	Sample ID	Date/Time	Matrix	Depth (ft BLS)	Sample Method	Comments	
Delineation Sampling	SB-4	SB-4 (0-0.5')	2/4/20 1450	Soil	0-0.5	fine	Sand with some silt, moist, loose, med dark black, some vegetation throughout	
		SB-4 (0.5-2')	2/4/20 1452		0.5-2	fine	Sand with some silt and organics, loose, dark black/reddish brown/gray, moist, some concrete pieces	
		SB-4 (2-4')	2/4/20 1454		2-4	fine	Silt with some sand and clay, loose, moist, black and light brown	
		SB-4 (4- 6) 5	2/4/20 1456		4- 6 5	fine	Sand with some silt, moist, loose, light brown, water encountered at 5' b/s	
	SB-5	SB-5 (0-0.5')	2/4/20 1515		0-0.5	HA	fine	Silty sand, moist, loose, black, vegetation throughout
		SB-5 (0.5-2')	2/4/20 1517		0.5-2	fine	silt with some sand and clay, moist, loose, black, construction debris throughout	
		SB-5 (2- 4) 4	2/4/20 1519		2-4	fine	silt with some sand and clay, moist, loose, black with some med brown, construction debris throughout	
		SB-5 (4- 6) 5	2/4/20 1521		4- 6 5	fine	silty sand, moist/wet, black, loose, construction debris throughout	

**Table 1: Sampling Work Plan
Palm Beach State College**

Rationale	Location ID	Sample ID	Date/Time	Matrix	Depth (ft BLS)	Sample Method	Comments
Delineation Sampling	SB-6	SB-6 (2- 4) 3	2/5/20 940	Soil	2- 4 3	HA	fine sand with some silt, med brown and grey, loose, moist/wet, water encountered at 3' b/s
		SB-6 (4-6)	2/5/20 942		4-6		Andrus
	SB-7	SB-7 (2-4)	2/4/20 1105		2-4		fine sand with some silt, dark brown, loose, moist
		SB-7 (4- 4) 5	2/4/20 1107		4- 4 5		fine sand with some silt, dark with some light brown, loose, moist/wet with some roots
	SB-8	SB-8 (0-0.5')	2/5/20 855		0-0.5		fine silty sand, moist, loose, dark brown, some vegetation throughout
		SB-8 (0.5-2')	2/5/20 857		0.5-2		fine silty sand, moist, loose, some gravel throughout
		SB-8 (2- 2) 4	2/5/20 859		2-4		fine silty sand, moist, loose, grey/black,
		SB-8 (4- 4) 5	2/5/20 901		4- 4 5		fine silty sand, loose, dark brown and light brown, moist/wet, water encountered at 5' b/s

**Table 1: Sampling Work Plan
Palm Beach State College**

Rationale	Location ID	Sample ID	Date/Time	Matrix	Depth (ft BLS)	Sample Method	Comments
Delineation Sampling	SB-9	SB-9 (0-0.5')	2/5/20 910	Soil	0-0.5	HA	fine silty sand, moist, loose, dark brown, some vegetation throughout
		SB-9 (0.5-2')	2/5/20 912		0.5-2		fine silty sand, moist, loose, dark brown
		SB-9 (2- 3) 4	2/5/20 914		2-4		fine sand with some silt, loose, moist, med and light brown
		SB-9 (4- 6) 5	2/5/20 916		4-6		fine sand with some silt, loose, moist/wet, gray and light brown and dark brown, water encountered at 5' b/s
	SB-10	SB-10 (0-0.5')	2/5/20 1025		0-0.5		fine sand with some silt, med/dark brown, moist, loose, some vegetation throughout
		SB-10 (0.5-2')	2/5/20 1027		0.5-2		fine silty sand, dark brown, moist, loose
		SB-10 (2- 3) 4	2/5/20 1029		2-4		fine sand with some silt, light and dark brown, moist, loose, some gravel throughout
		SB-10 (4- 6) 4.5	2/5/20 1031		4- 6 4.5		fine sand with some silt, light and dark brown, loose, moist/wet, water encountered at 5' b/s

Table 1: Sampling Work Plan
Palm Beach State College

Rationale	Location ID	Sample ID	Date/Time	Matrix	Depth (ft BLS)	Sample Method	Comments			
Delineation Sampling	SB-11	SB-11 (0-0.5')	2/5/20 950	Soil	0-0.5	HA	fine sand with some silt, med black, loose, moist, some vegetation throughout			
		SB-11 (0.5-2')	2/5/20 952		0.5-2		fine sand with some silt, med black and gray, loose, moist, some gravel			
		SB-11 (2-5')	2/5/20 954		2-4		fine sand with some silt, gray, dark brown and light brown, loose, moist, some shell fragments throughout			
		SB-11 (4-6')	2/5/20 956		4-5		fine sand, light gray, moist/wet, loose, water encountered at 5' b/s			
	SB-12	SB-12 (0-0.5')	2/4/20 945		0-0.5		Organic silt with some sand, dark brown, fine grain, some vegetation, loose, moist			
		SB-12 (0.5-2')	2/4/20 955		0.5-2		fine sand with some silt, dark brown, fine grain, loose, moist			
		SB-12 (2-5')	2/4/20 957		2-4		↓			
		SB-12 (4-5')	2/4/20 955		4-5		fine sand with some silt, dark brown/black, fine grain, loose, moist/wet, glass fragment and shells found			
								water encountered at 5 ft BLS		

**Table 1: Sampling Work Plan
Palm Beach State College**

Rationale	Location ID	Sample ID	Date/Time	Matrix	Depth (ft BLS)	Sample Method	Comments
Delineation Sampling	SB-13	SB-13 (0-0.5')	2/4/20 1020	Soil	0-0.5	HA	Sandy silt, dark brown, fine, moist, vegetation throughout, loose
		SB-13 (0.5-2')	2/4/20 1022		0.5-2		fine sand with some silt, dark brown, loose, moist, some brick fragments and concrete fragments
		SB-13 (2-3') 4	2/4/20 1024		2-4		↓
		SB-13 (4-5') 5	2/4/20 1026		4-5		fine sand with some silt, dark brown/black, loose, moist/wet, water encountered at 5' bls
	SB-14	SB-14 (0-0.5')	2/4/20 1045		0-0.5		Sandy silt, dark brown, fine, moist, vegetation throughout, loose
		SB-14 (0.5-2')	2/4/20 1047		0.5-2		fine sand with some silt, dark brown with some reddish brown, loose, moist, some shell fragments
		SB-14 (2-3') 4	2/4/20 1049		2-4		↓
		SB-14 (4-5') 5	2/4/20 1051		4-5		fine sand with some silt, light brown, loose, moist/wet, water encountered at 5' bls

**Table 1: Sampling Work Plan
Palm Beach State College**

Rationale	Location ID	Sample ID	Date/Time	Matrix	Depth (ft BLS)	Sample Method	Comments
Delineation Sampling	SB-15	SB-15 (0-0.5')	2/4/20 1120	Soil	0-0.5	HA	fine sand with some silt, dry, loose, gray, some vegetation throughout
		SB-15 (0.5-2')	2/4/20 1122		0.5-2		fine sand with some silt, moist, loose, gray/light brown
		SB-15 (2-5')	2/4/20 1124		2-4		fine sand with some silt, moist, med broken, loose
		SB-15 (4-6')	2/4/20 1126		4-5		fine sand with some silt, moist/wet, dark brown, dry & light brown, loose, water encountered at 5' b/s
	SB-16	SB-16 (0-0.5')	2/4/20 1140		0-0.5		fine sand some silt, moist, loose, dark brown, vegetation throughout
		SB-16 (0.5-2')	2/4/20 1142		0.5-2		fine sand with some silt, moist, loose, light and dark brown
		SB-16 (2-5')	2/4/20 1144		2-4		fine sand with some silt, moist, loose, dark brown/black, plastic debris at 4'
		SB-16 (4-6')	2/4/20 1146		4-5		fine sand with some silt, moist/wet, loose, dark brown/black, water encountered at 5' b/s

**Table 1: Sampling Work Plan
Palm Beach State College**

Rationale	Location ID	Sample ID	Date/Time	Matrix	Depth (ft BLS)	Sample Method	Comments
Delineation Sampling	SB-17	SB-17 (0-0.5')	2/4/20 1200	Soil	0-0.5	HA	fine sand with some silt, moist, red brown, vegetation throughout, loose
		SB-17 (0.5-2')	2/4/20 1202		0.5-2		fine sand with some silt, moist, light and dark brown, some shells throughout, loose
		SB-17 (2-5')	2/4/20 1204		2-4		fine sand with some silt, moist, dark brown, some shells throughout, loose
		SB-17 (4-5')	2/4/20 1206		4-5		fine sand with some silt, moist/wet, light and dark brown, loose, water encountered at 5' b/s
	SB-18	SB-18 (0-0.5')	2/4/20 1545		0-0.5		fine sand with silt, moist, black, loose, vegetation throughout
		SB-18 (0.5-2')	2/4/20 1547		0.5-2		fine sand with silt, moist, black, loose
		SB-18 (2-5')	2/4/20 1549		2-4		fine sand with silt, moist, black with light brown, loose
		SB-18 (4-5')	2/4/20 1551		4-5		fine sand with silt, moist, black, some construction debris, loose, water encountered at 5' b/s

**Table 1: Sampling Work Plan
Palm Beach State College**

Rationale	Location ID	Sample ID	Date/Time	Matrix	Depth (ft BLS)	Sample Method	Comments
Delineation Sampling	SB-19	SB-19 (0-0.5')	2/4/20 1300	Soil	0-0.5	HA Asphalt for first 2" b/s	fine sand with some silt, dark brown, moist, loose, vegetation throughout
		SB-19 (0.5-2')	2/4/20 1302		0.5-2		fine sand with some silt, dark brown, moist, loose, shells throughout
		SB-19 (2-3')	2/4/20 1304		2-3		fine sandy silt, dark brown/black, moist/wet, loose, roots throughout, some concrete pieces, water encountered at 3' b/s
		SB-19 (4-6')			4-6		
	SB-20	SB-20 (0-0.5')	2/5/20 1100		0-0.5		fine sand with some silt and gravel, light brown, loose, moist
		SB-20 (0.5-2')	2/5/20 1102		0.5-2		fine sand with some silt and gravel, light and med/dark, moist
		SB-20 (2-4')	2/5/20 1104		2-4		fine sand with some silt, dark brown, moist, loose, some shell fragments
		SB-20 (4-4.5')	2/5/20 1106		4-4.5		fine sand with some silt, dark brown/black, moist/wet, loose, shells and black "gravel like" rock throughout, water encountered at 4.5' b/s

**Table 1: Sampling Work Plan
Palm Beach State College**

Rationale	Location ID	Sample ID	Date/Time	Matrix	Depth (ft BLS)	Sample Method	Comments	
Delineation Sampling	SB-21 SB-22	SB-22 SB-21 (0-0.5')	2/4/20 1322	Soil 1200	0-0.5	HA Asphalt first 24 b/s	fine silty sand, moist, loose, some vegetation throughout, dark brown, some shells	
		SB-22 SB-21 (0.5-2')	2/4/20 1324		0.5-2		fine sand with some silt, dark brown, moist, loose, some concrete pieces	
		SB-22 SB-21 (2-3')	2/4/20 1326		2-4		fine sand with some silt, med brown, moist, loose, some shells and rocks	
		SB-22 SB-21 (4-5')	2/4/20 1328		4-5		fine sand with some silt, med and light brown, moist/wet, loose, some shells and rocks, water encountered at 5' b/s	
	SB-22 SB-21	21 SB-22 (0-0.5')	2/4/20 1322		2/5/20 1200		0-0.5	fine sand with some silt and gravel, moist, loose, gray
		21 SB-22 (0.5-2')	2/4/20 1322		2/5/20 1202		0.5-2	fine sand with some silt and gravel, moist, loose, gray
		21 SB-22 (2-3')	2/4/20 1204		2/5/20 1204		2-4	fine sand and med sand, moist, loose, gray/light brown
		21 SB-22 (4-5')	2/4/20 1206		2/5/20 1206		4-5	fine and med sand, moist/wet, loose, dark gray, water encountered at 5' b/s

**Table 1: Sampling Work Plan
Palm Beach State College**

Rationale	Location ID	Sample ID	Date/Time	Matrix	Depth (ft BLS)	Sample Method	Comments
Delineation Sampling	SB-23	SB-23 (0-0.5')	2/5/20 1130	Soil	0-0.5	HA	Fine sand with some silt, med black/dark brown, moist, loose, vegetation throughout
		SB-23 (0.5-2')	2/5/20 1132		0.5-2		Fine sand with some silt, med/dark black, moist, loose
		SB-23 (2-4) 4	2/5/20 1134		2-4		Fine sand with some silt, gray and light brown and dark brown, loose, moist/wet, water encountered at 3' BLS
		SB-23 (4-6')			4-6		<i>[Signature]</i>
Monitoring Wells							
Delineation Sampling	DEPMW-1	DEPMW-1 (3-13')		Groundwater	3-13	Peristaltic Pump	
	DEPMW-2	DEPMW-2 (3-13')			3-13		
		DUP 3 (3-13')			3-13		<i>[Signature]</i>
	DEPMW-3	DEPMW-3 (3-13')			3-13		
DEPMW-4	DEPMW-4 (3-13')		3-13				

**Table 1: Sampling Work Plan
Palm Beach State College**

Rationale	Location ID	Sample ID	Date/Time	Matrix	Depth (ft BLS)	Sample Method	Comments
Laboratory QA/QC Samples							
Potential sources of contamination from monitoring well installation and HA sampling equipment	Equipment Blanks (ratio of 1:10)	EQB-4	2/4/20 9:25	Water	N/A	N/A	off HA prior to SB-12
		EQB-5	2/5/20 10:00				off Drilling Auger prior to installation of DEPMW-00
		EQB-6					
		EQB-7					
		EQB-8					
		EQB-9					
		EQB-10					
		EQB-11					
		EQB-12					
		EQB-13					
		Drilling Water	2/5/20 9:15	water	N/A	N/A	out of driller's decon water

**Table 1: Sampling Work Plan
Palm Beach State College**

Rationale	Location ID	Sample ID	Date/Time	Matrix	Depth (ft BLS)	Sample Method	Comments
Evaluate potential impact of sample cross-contamination	Field Reagent Blanks (1 per cooler)	FRB-1		Water	N/A		⊕
		FRB-2					
		FRB-3					
		FRB-4					
		FRB-5					
		FRB-6					
		FRB-7					
IDW Sample							
Waste characterization	Drum Number [Ⓢ] 4	IDW 2 Soil Drum Sample	2/6/2025 920	Soil Cuttings	VOCs, SVOCs, RCRA metals, PFAS		NA
lc	9	Water Drum Sample	2/6/2020 900	Decon. Water	lc		NA

**Table 1: Sampling Work Plan
Palm Beach State College**

Rationale	Location ID	Sample ID	Date/Time	Matrix	Depth (ft BLS)	Sample Method	Comments
Monitoring Wells							
Delineation Sampling	DEPMW-1	DEPMW-1 (3-13')	3/4/20 1030	Groundwater	3-13	Peristaltic Pump	Collected by FDEP
	DEPMW-2	DEPMW-2 (3-13')	3/4/20 1415		3-13		Collected by FDEP
		DUP 3 (3-13')			3-13		Collected by FDEP
	DEPMW-3	DEPMW-3 (3-13')	3/4/20 1230		3-13		Collected by FDEP
	DEPMW-4	DEPMW-4 (3-13)	3/4/20 1115		3-13		Collected by FDEP
	DEPMW-5	DEPMW-5 (3-13')	3/4/20 1315		3-13		Collected by FDEP
		DUP 4 (3-13')			3-13		Collected by FDEP
	DEPMW-6	DEPMW-6 (3-13')	3/4/20 945		3-13		Collected by FDEP
	DEPMW-7	DEPMW-7 (3-13')	3/4/20 850		3-13		Collected by FDEP
		DEPMW-7(3-13') DUP 3/4/20 850			3-13		Collected by FDEP
DEPMW-8	DEPMW-8 (3-13')	3/4/20 1500	3-13	Collected by FDEP			

**Table 1: Sampling Work Plan
Palm Beach State College**

Rationale	Location ID	Sample ID	Date/Time	Matrix	Depth (ft BLS)	Sample Method	Comments
Delineation Sampling	DEPMW-9	DEPMW-9 (85-105')	3/4/20 1330	Groundwater	85-105	Peristaltic Pump	
	DEPMW-10	DEPMW-10 (87-107')	3/4/20 1530		87-107		
	DEPMW-11	DEPMW-11 (45-65')	3/4/20 1626		45-65		
	DEPMW-12	DEPMW-12 (45-65')	3/4/20 1145		45-65		
	DEPMW-13	DEPMW-13 (45-65')	3/4/20 1425		45-65		
		DEPMW-13 (45-65') DUP	3/4/20 1430		45-65		

**Table 1: Sampling Work Plan
Palm Beach State College**

Rationale	Location ID	Sample ID	Date/Time	Matrix	Depth (ft BLS)	Sample Method	Comments
Laboratory QA/QC Samples							
Potential sources of contamination from monitoring well installation and HA sampling equipment	Equipment Blanks (ratio of 1:10)	EQB-4		Water	N/A		Equipment Blank not collected per FDEP
		EQB-5					
		EQB-6					
		EQB-7					
		EQB-8					
		EQB-9					
		EQB-10					
		EQB-11					
		EQB-12					
		EQB-13					

**Table 1: Sampling Work Plan
Palm Beach State College**

Rationale	Location ID	Sample ID	Date/Time	Matrix	Depth (ft BLS)	Sample Method	Comments
Evaluate potential impact of sample cross-contamination	Field Reagent Blanks (1 per cooler)	FRB-1	3/4/20	Water	N/A		Collected by FDEP
		FRB-2					
		FRB-3					
		FRB-4					
		FRB-5					
		FRB-6					
		FRB-7					

BORING LOG

Boring/Well Number: DEPMW-1		Permit Number: -		FDEP Facility Identification Number: ERIC_7408	
Site Name: Palm Beach State College (PBSC)		Borehole Start Date: 2/5/20	Borehole Start Time: 1245 <input type="checkbox"/> AM <input type="checkbox"/> PM	End Date: 2/5/20	
Environmental Contractor: Geosyntec Consultants		Geologist's Name: -		Environmental Technician's Name: Dakota Uchardy	
Drilling Company: Preferred Drilling Solutions		Pavement Thickness (inches): 0	Borehole Diameter (inches): 10	Borehole Depth (feet):	
Drilling Method(s): DPT	Apparent Borehole DTW (in feet from soil moisture content): 25	Measured Well DTW (in feet after water recharges in well): NA	OVA (list model and check type): NA <input type="checkbox"/> FID <input type="checkbox"/> PID		
Disposition of Drill Cuttings [check method(s)]: <input checked="" type="checkbox"/> Drum <input type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other (describe if other or multiple items are checked):					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe)					

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
PH	0-7		NA	NA	NA	NA	1	fine sand w/ some silt, light gray, low plast, no odor/stains	SW	M	NA
			NA				2	↓			
			NA				3				
			NA				4				
			NA				5				
			NA				6				
			NA				7				
			NA				8	light gray silty sand, low plast, no odor/stains	SM		
			NA				9	↓			
			NA				10		dark brown sandy silt, low plast, no odor/stains	MH	
							10-12	~11: light brown silty sand, low plast, no odor/stains	SM		
							12-13	↓			

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DEPMU-2		Permit Number: -		FDEP Facility Identification Number: ERIC_7408	
Site Name: Palm Beach State College (PBSC)		Borehole Start Date: 2/5/10	Borehole Start Time: 1420 <input type="checkbox"/> AM <input type="checkbox"/> PM	End Date: 2/5/20	
Environmental Contractor: Geosyntec Consultants		Geologist's Name: -		Environmental Technician's Name: Joshua Verdery	
Drilling Company: Preferred Drilling Solutions		Pavement Thickness (inches): 0	Borehole Diameter (inches): 10	Borehole Depth (feet): 13	
Drilling Method(s): DPT	Apparent Borehole DTW (in feet from soil moisture content): 25	Measured Well DTW (in feet after water recharges in well): NA	OVA (list model and check type): NA <input type="checkbox"/> FID <input type="checkbox"/> PID		
Disposition of Drill Cuttings [check method(s)]: <input checked="" type="checkbox"/> Drum <input type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other <i>(describe if other or multiple items are checked):</i>					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe)					

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description <small>(include grain size based on USCS, odors, staining, and other remarks)</small>	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples <small>(list sample number and depth or temporary screen interval)</small>
PH	0-7	69	NA	NA	NA	NA	1	dark gray silty sand, some organics	SM	M	NA
			NA				2	dark/red brown silty sand, low plast., no odor/skins	SM		
			NA				3				
			NA				4				
			NA				5				
			NA				6				
			NA				7				
PH	7-13	29	NA				8	brown silty sand, low plast., no odor/skins	SM		
			NA				9				
			NA				10	Dark gray/blue silty sand, low plast., no odor/skins			
							10-12				
							12-13				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DEPMW-3		Permit Number: -		FDEP Facility Identification Number: ERIC_7408	
Site Name: Palm Beach State College (PBSC)		Borehole Start Date: 2/6/20	Borehole Start Time: 1130 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM		
		End Date: 2/6/20	End Time: 1220 <input type="checkbox"/> AM <input checked="" type="checkbox"/> PM		
Environmental Contractor: Geosyntec Consultants		Geologist's Name: -		Environmental Technician's Name: Joshua Ucharly	
Drilling Company: Preferred Drilling Solutions		Pavement Thickness (inches): 0	Borehole Diameter (inches): 10		Borehole Depth (feet): 13
Drilling Method(s): DPT		Apparent Borehole DTW (in feet from soil moisture content): ~5	Measured Well DTW (in feet after water recharges in well): NA		OVA (list model and check type): NA <input type="checkbox"/> FID <input type="checkbox"/> PID
Disposition of Drill Cuttings [check method(s)]: <input checked="" type="checkbox"/> Drum <input type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other (describe if other or multiple items are checked):					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe)					

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
PH	0-7		NA	NA	NA	NA	1	fine sand w/ some silt, dark brown, trace shells/fragments	SW	M	NA
			NA				2	low plast., no odor/stains			
			NA				3				
			NA				4				
			NA				5				
			NA				6			W	
			NA				7				
DPT	7-13	2.4"	NA				8	light gray silty sand, low plast., no odor/stains	SM		
			NA				9	dark gray silty sand, low plast., no odor/stains			
			NA				10	light brown silty sand, low plast., no odor/stains			
							10-12				
							12-13				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DEPMW-4		Permit Number: —		FDEP Facility Identification Number: ERIC 7408	
Site Name: Palm Beach State College (PBSC)		Borehole Start Date: 2/6/20 End Date: 2/6/20		Borehole Start Time: 9:30 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM End Time: 1:05 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	
Environmental Contractor: Geosyntec Consultants		Geologist's Name: —		Environmental Technician's Name: Joshua Ocherdy	
Drilling Company: Preferred Drilling Solutions		Pavement Thickness (inches): 0	Borehole Diameter (inches): 10		Borehole Depth (feet): 13
Drilling Method(s): DPT	Apparent Borehole DTW (in feet from soil moisture content): ~5		Measured Well DTW (in feet after water recharges in well): NA		OVA (list model and check type): NA <input type="checkbox"/> FID <input type="checkbox"/> PID
Disposition of Drill Cuttings [check method(s)]: <input checked="" type="checkbox"/> Drum <input type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other <i>(describe if other or multiple items are checked):</i>					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe)					

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description <small>(include grain size based on USCS, odors, staining, and other remarks)</small>	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples <small>(list sample number and depth or temporary screen interval)</small>
PH	0-7.84		NA	NA	NA	NA	1	low sand, some silt, dark gray Sand w/ some silt and organics, dark brown/gray.	SW	M	NA
			NA				2	↓			
			NA				3	↓			
			NA				4	Silt w/ some sand, light brown	MH		
			NA				5	↓			
			NA				6	↓		W	
			NA				7	↓			
DPT	7-13	24"	NA				8	dark gray silty sand, low plant, no odor/stains	SM		
			NA				9	↓			
			NA				10	dark brown sandy silt, low plant, no odor/stains	MH		
							10-12	light brown silty sand, low plant, no odor/stains	JM		
							12-13	↓			

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DEPMW-5		Permit Number: -		FDEP Facility Identification Number: ERIC_7408	
Site Name: Palm Beach State College (PBSC)		Borehole Start Date: 2/5/20	Borehole Start Time: 1335 <input type="checkbox"/> AM <input type="checkbox"/> PM	End Date: 2/5/20	
Environmental Contractor: Geosyntec Consultants		Geologist's Name: -		Environmental Technician's Name: Toshua Worthy	
Drilling Company: Preferred Drilling Solutions		Pavement Thickness (inches): 0	Borehole Diameter (inches): 10	Borehole Depth (feet): 13	
Drilling Method(s): DPT		Apparent Borehole DTW (in feet from soil moisture content): ~5	Measured Well DTW (in feet after water recharges in well): NA	OVA (list model and check type): NA <input type="checkbox"/> FID <input type="checkbox"/> PID	
Disposition of Drill Cuttings [check method(s)]: <input checked="" type="checkbox"/> Drum <input type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other <i>(describe if other or multiple items are checked):</i>					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe)					

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description <small>(include grain size based on USCS, odors, staining, and other remarks)</small>	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
PH-7			NA	NA	NA	NA	1	fine sand w/ some silt, drk brown, low plast, no odor/creams	SW	M	NA
↓	↓	↓	NA	↓	↓	↓	2		↓	↓	↓
↓	↓	↓	NA	↓	↓	↓	3		↓	↓	↓
↓	↓	↓	NA	↓	↓	↓	4		↓	↓	↓
↓	↓	↓	NA	↓	↓	↓	5		↓	↓	↓
↓	↓	↓	NA	↓	↓	↓	6		↓	↓	↓
↓	↓	↓	NA	↓	↓	↓	7		↓	↓	↓
DPT 7-36"			NA	↓	↓	↓	8	dark grey silty sand, low plasticity, no color/stain	SM		
↓	↓	↓	NA	↓	↓	↓	9	gray silty sand, low plast, no color/stain	↓	↓	↓
↓	↓	↓	NA	↓	↓	↓	10	pale grey silty sand, low plast, no color/stain	↓	↓	↓
↓	↓	↓		↓	↓	↓	10-12		↓	↓	↓
↓	↓	↓		↓	↓	↓	12-13		↓	↓	↓

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DEPMW-6		Permit Number: —		FDEP Facility Identification Number: ERIC_7408	
Site Name: Palm Beach State College (PBSC)		Borehole Start Date: 2/6/20	Borehole Start Time: 800	<input checked="" type="checkbox"/> AM	<input type="checkbox"/> PM
		End Date: 2/6/20	End Time: 845	<input checked="" type="checkbox"/> AM	<input type="checkbox"/> PM
Environmental Contractor: Geosyntec Consultants		Geologist's Name: —		Environmental Technician's Name: Joshua Odrachy	
Drilling Company: Preferred Drilling Solutions		Pavement Thickness (inches): 0	Borehole Diameter (inches): 10	Borehole Depth (feet): 13	
Drilling Method(s): DPT	Apparent Borehole DTW (in feet from soil moisture content): 25	Measured Well DTW (in feet after water recharges in well): NA	OVA (list model and check type): NA <input type="checkbox"/> FID <input type="checkbox"/> PID		
Disposition of Drill Cuttings [check method(s)]: <input checked="" type="checkbox"/> Drum <input type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other (describe if other or multiple items are checked):					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe)					

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
PH	0-7	84	NA	NA	NA	NA	1	fine sand w/ some silt, dark brown, low plast.	SW	M	NA
			NA				2	↓			
			NA				3				
			NA				4	↓			
			NA				5	fine sand w/ some silt, light brown, low plast.			
			NA				6	↓	W ₂₀		
			NA				7	↓		SW	
DPT	7-13	24"	NA				8	dark gray silty sand, low plasticity, no odor/staining		SM	
			NA				9	↓			
			NA				10	light gray silty sand, low plasticity, no odor/staining			
							10-12	↓			
							12-13	↓			

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DEPMW-7		Permit Number: —		FDEP Facility Identification Number: ERIC_7408	
Site Name: Palm Beach State College (PBSC)		Borehole Start Date: 2/5/20	Borehole Start Time: 1515 <input type="checkbox"/> AM <input type="checkbox"/> PM		
		End Date: 2/5/20	End Time: 1615 <input type="checkbox"/> AM <input type="checkbox"/> PM		
Environmental Contractor: Geosyntec Consultants		Geologist's Name: —		Environmental Technician's Name: Oshun Udeyady	
Drilling Company: Preferred Drilling Solutions		Pavement Thickness (inches): 6	Borehole Diameter (inches): 10		Borehole Depth (feet): 13
Drilling Method(s): DPT	Apparent Borehole DTW (in feet from soil moisture content): 25	Measured Well DTW (in feet after water recharges in well): NA		OVA (list model and check type): NA <input type="checkbox"/> FID <input type="checkbox"/> PID	
Disposition of Drill Cuttings [check method(s)]: <input checked="" type="checkbox"/> Drum <input type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other (describe if other or multiple items are checked):					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe)					

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
PH	0-7		NA	NA	NA	NA	1	aphalt ~2" fine sand w/ silt (light brown SW)		M	NA
			NA				2	fine sand w/ some silt, some gravel			
			NA				3	tight brown, low plast.			
			NA				4	fine sand w/ some silt, dark brown, low plast.			
			NA				5				
			NA				6			W	
			NA				7				
			NA				8	light gray silty sand, low plasticity; no odor/staining	SM		
			NA				9				
			NA				10				
							10-12				
							12-13				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DEPMW-8		Permit Number: -		FDEP Facility Identification Number: ERIC_7408	
Site Name: Palm Beach State College (PBSC)		Borehole Start Date: 2/5/00	Borehole Start Time: 1040 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	End Date: 2/5/00	
Environmental Contractor: Geosyntec Consultants		Geologist's Name: NA		Environmental Technician's Name: Boshua Uday	
Drilling Company: Preferred Drilling Solutions		Pavement Thickness (inches): 6	Borehole Diameter (inches): 10	Borehole Depth (feet): 13	
Drilling Method(s): DPT	Apparent Borehole DTW (in feet from soil moisture content): ~5	Measured Well DTW (in feet after water recharges in well): NA	OVA (list model and check type): NA <input type="checkbox"/> FID <input type="checkbox"/> PID		
Disposition of Drill Cuttings [check method(s)]: <input checked="" type="checkbox"/> Drum <input type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other (describe if other or multiple items are checked):					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe)					

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
PH	0-6"	0-6"	NA	NA	NA	NA	1	0-6" - asphalt	SM	M	NA
			NA				2	dark gray silty sand, trace odor / staining, low plasticity	SM		
			NA				3				
			NA				4				
			NA				5			W	
			NA				6				
			NA				7				
DPT	7-13	24"	NA				8	light gray silty sand; trace shell fragments, low plasticity	SM		
			NA				9	dark gray/black silty sand, no odor / staining, low plast.			
			NA				10	brown silty sand; no odor / staining, low plasticity			
							10-12	soil: pale brown silty sand, no odor / staining, low plasticity			
							12-13				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings
 Moisture Content Codes: **D** = Dry; **M** = Moist; **W** = Wet; **S** = Saturated

BORING LOG

Boring/Well Number: <u>DEPMW-139</u>		Permit Number: <u>NA</u>		FDEP Facility Identification Number: <u>ERIC-7408</u>	
Site Name: <u>PBSC</u>		Borehole Start Date: <u>2/24/20</u>	Borehole Start Time: <u>1450</u>	<input type="checkbox"/> AM <input checked="" type="checkbox"/> PM	
		End Date: <u>2/25/20</u>	End Time: <u>1225</u>	<input type="checkbox"/> AM <input checked="" type="checkbox"/> PM	
Environmental Contractor: <u>Geosyntec Consultants</u>		Geologist's Name: <u>J. Hollingshead</u>		Environmental Technician's Name: <u>J. Uduardy</u>	
Drilling Company: <u>PDS</u>		Pavement Thickness: <u>NA</u>	Borehole Diameter (inches): <u>6</u>	Borehole Depth (feet): <u>105</u>	
Drilling Method(s): <u>HA, Sonic</u>	Apparent borehole DTW (in ft from soil moisture content): <u>4</u>	Measured well DTW (in feet after water recharges in well): <u>4.25 BTDC</u>	OVA (list model and check type): <u>NA</u>		
Disposition of Drill Cuttings [check method(s)]: <input checked="" type="checkbox"/> Drum <input type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other					
<i>(describe if other or multiple items are checked):</i>					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe)					

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-0.5	6	NA	NA	NA	NA	0.5	Silty SAND, dark brown, moist, loose, very fine to med. grained, poorly sorted, with large gravel, with SM	SP/SM	M	NA
HA	0.5-1	12	NA	NA	NA		1	Silty SAND, very pale brown, moist, loose, very fine to coarse grained, poorly sorted		M	
HA	1-2	12	NA	NA	NA		2	SAA		M	
HA	2-3	12	NA	NA	NA		3	SAA		M	
HA	3-4	12	NA	NA	NA		4	SAA		M	
SC	4-5	12	NA	NA	NA		5	SAA, wet at 4 ft bls		W	
SC	5-6	10.6	NA	NA	NA		6	Silty SAND, light gray, wet, loose, very fine to coarse grained, poorly sorted			
SC	6-7	10.6	NA	NA	NA		7	SAA			
SC	7-8	10.6	NA	NA	NA		8	SAA			
SC	8-9	10.6	NA	NA	NA		9	SAA			
SC	9-10	10.6	NA	NA	NA		10	SAA	SP/SM		
SC	10-11	12	NA	NA	NA	NA	11	Silty SAND with silt, greenish brown, wet, loose, poorly sorted, fine to coarse grained	SP	W	

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 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: <u>DEDMW-17</u>		FDEP Facility Identification: <u>ERIC-7408</u>			Site Name: <u>PBSC</u>		Borehole Start Date: <u>2/24/20</u> End Date: <u>2/25/20</u>				
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
SC	11-12	12	NA	NA	NA	NA	12	SAA	SP	W	NA
SC	12-13	12	NA	NA	NA		13	SAA			
SC	13-14	12	NA	NA	NA		14	SAA, greenish gray at 13-15 ft bls			
SC	14-15	12	NA	NA	NA		15	SAA			
SC	15-16	7.6	NA	NA	NA		16	SAND with silt, gray, wet, loose, very fine to medium-grained, poorly sorted			
SC	16-17	7.6	NA	NA	NA		17	SAA			
SC	17-18	7.6	NA	NA	NA		18	SAA			
SC	18-19	7.6	NA	NA	NA		19	SAA			
SC	19-20	7.6	NA	NA	NA		20	SAA			
SC	20-21	11.2	NA	NA	NA		21	SAND with silt, gray, wet, loose, very fine to medium-grained, poorly sorted			
SC	21-22	11.2	NA	NA	NA		22	SAA			
SC	22-23	11.2	NA	NA	NA		23	SAA			
SC	23-24	11.2	NA	NA	NA		24	SAA			
SC	24-25	11.2	NA	NA	NA		25	SAA			
SC	25-26	12	NA	NA	NA		26	SAND with silt, gray, wet, loose, very fine to medium-grained, poorly sorted			
SC	26-27	12	NA	NA	NA		27	SAA			
SC	27-28	12	NA	NA	NA		28	SAA			
SC	28-29	12	NA	NA	NA	NA	29	SAA	SP	W	✓

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: <u>DEP MW-179</u>		FDEP Facility Identification: <u>ERIC-7408</u>		Site Name: <u>RS SC</u>		Borehole Start Date: <u>2/24/20</u> End Date: <u>2/25/20</u>					
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
SC	29-30	12	NA	NA	NA	NA	30	SAA	SP	W	NA
SC	30-31	10.2	↓	↓	↓	↓	31	SAND with silt, light greenish gray, wet, loose, very fine to medium grained, poorly sorted	↓	↓	↓
SC	31-32	10.2	↓	↓	↓	↓	32	SAA	↓	↓	↓
SC	32-33	10.2	↓	↓	↓	↓	33	SAND with silt, yellowish brown, wet, loose, fine to coarse-grained, poorly sorted	↓	↓	↓
SC	33-34	10.2	↓	↓	↓	↓	34	SAA	↓	↓	↓
SC	34-35	10.2	↓	↓	↓	↓	35	SAA	↓	↓	↓
SC	35-36	11.8	↓	↓	↓	↓	36	SAND with silt, yellowish brown, wet, loose, fine to coarse-grained, poorly sorted	↓	↓	↓
SC	36-37	11.8	↓	↓	↓	↓	37	SAA	↓	↓	↓
SC	37-38	11.8	↓	↓	↓	↓	38	SAA	↓	↓	↓
SC	38-39	11.8	↓	↓	↓	↓	39	SAA	↓	↓	↓
SC	39-40	11.8	↓	↓	↓	↓	40	SAA	↓	↓	↓
SC	40-41	8.8	↓	↓	↓	↓	41	SAND with silt, greenish gray, wet, loose, very fine to medium-grained, poorly sorted	↓	↓	↓
SC	41-42	8.8	↓	↓	↓	↓	42	SAA	↓	↓	↓
SC	42-43	8.8	↓	↓	↓	↓	43	SAA	↓	↓	↓
SC	43-44	8.8	↓	↓	↓	↓	44	SAA, fine to coarse-grained, poorly sorted at 43-45 ft b/s	↓	↓	↓
SC	44-45	8.8	↓	↓	↓	↓	45	SAA	↓	↓	↓
SC	45-46	9.2	↓	↓	↓	↓	46	SAND with silt, greenish gray, wet, loose, very fine to coarse-grained, poorly sorted	↓	↓	↓
SC	46-47	9.2	↓	↓	↓	↓	47	SAA	SP	W	↓

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 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: <u>DEPMW-129</u>		FDEP Facility Identification: <u>ERIC-7408</u>		Site Name: <u>PBSC</u>		Borehole Start Date: <u>2/24/2020</u> End Date: <u>2/25/2020</u>					
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
SC	47-48	9.2	NA	NA	NA	NA	48	SAA	SP	W	NA
SC	48-49	9.2	↓	↓	↓	↓	49	SAA, gray at 48-50 ft bls	↓	↓	↓
SC	49-50	9.2	↓	↓	↓	↓	50	SAA	↓	↓	↓
SC	50-51	8.0	↓	↓	↓	↓	51	SAND with silt, gray, wet, loose, very fine to medium-grained, poorly sorted	↓	↓	↓
SC	51-52	8.0	↓	↓	↓	↓	52	SAA	↓	↓	↓
SC	52-53	8.0	↓	↓	↓	↓	53	SAA, with dark gray lenses at 52-54 ft bls	↓	↓	↓
SC	53-54	8.0	↓	↓	↓	↓	54	SAA	SP	↓	↓
SC	54-55	8.0	↓	↓	↓	↓	55	silty SAND, black, wet, loose, very fine to medium-grained, poorly sorted	SP/SM	↓	↓
SC	55-56	8.4	↓	↓	↓	↓	56	SAA	↓	↓	↓
SC	56-57	8.4	↓	↓	↓	↓	57	SAA	↓	↓	↓
SC	57-58	8.4	↓	↓	↓	↓	58	SAA	↓	↓	↓
SC	58-59	8.4	↓	↓	↓	↓	59	SAA	↓	↓	↓
SC	59-60	8.4	↓	↓	↓	↓	60	Silty SAND, black, wet, loose, very fine to coarse-grained, poorly sorted, with abundant shell fragments	↓	↓	↓
SC	60-61	11.9	↓	↓	↓	↓	61	SAA	↓	↓	↓
SC	61-62	11.9	↓	↓	↓	↓	62	SAA	↓	↓	↓
SC	62-63	11.9	↓	↓	↓	↓	63	silty SAND / sandy SILT, dark gray, wet, med. dense, very fine to fine-grained, well-sorted	SW SP/SM	↓	↓
SC	63-64	11.9	↓	↓	↓	↓	64	SAA	↓	↓	↓
SC	64-65	11.9	↓	↓	↓	↓	65	SAA	↓	↓	↓

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: <u>DEPMW-13 9</u>		FDEP Facility Identification <u>EDIC-7408</u>				Site Name: <u>PRSC</u>		Borehole Start Date: <u>2/24/2020</u> End Date:			
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
SC	65-66	12	NA	NA	NA	NA	66	Silty SAND/sandy SILT, dark gray, wet, med. dense, very fine to fine-grained, well-sorted	SW/SM	W	NA
SC	66-67	12	1				67	SAA			
SC	67-68	12					68	SAA			
SC	68-69	12					69	SAA			
SC	69-70	12					70	SAA, with some shell fragments at 69-70ft bls ↓			
SC	70-71	10					71	Silty SAND, dark gray, wet, loose, very fine to medium-grained, poorly sorted, with some shell fragments at 70-71 ft bls	SP/SM		
SC	71-72	10					72				
SC	72-73	10					73	SAA			
SC	73-74	10					74	SAA			
SC	74-75	10					75	SAA			
SC	75-76	10.4					76	Silty SAND, dark gray, wet, loose, very fine to fine-grained, well-sorted	SW/SM		
SC	76-77	10.4					77	SAA			
SC	77-78	10.4					78	SAA			
SC	78-79	10.4					79	SAA			
SC	79-80	10.4					80	SAA			
SC	80-81	11.2					81	Silty SAND, dark gray, wet, loose, very fine to medium grained, well sorted			
SC	81-82	11.2					82	SAA			
SC	82-83	11.2					83	SAA			

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: <i>DEPM-18 9</i>		FDEP Facility Identification <i>ERIC - 87408</i>			Site Name: <i>⊕ PBSC</i>		Borehole Start Date: <i>2/24/20</i> End Date: <i>2/25/20</i>				
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
SC	<i>83-84</i>	<i>11.2 NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	84	<i>SAA</i>		<i>W</i>	<i>NA</i>
SC	<i>84-85</i>	<i>11.2</i>	<i> </i>	<i> </i>	<i> </i>	<i> </i>	85	<i>SAA</i>		<i>↓</i>	<i> </i>
SC	<i>85-86</i>	<i>12</i>	<i> </i>	<i> </i>	<i> </i>	<i> </i>	86	<i>⊕ silty SAND, dark gray, wet, loose, very fine to medium grained, well sorted</i>	<i>SP/SM</i>	<i> </i>	<i> </i>
SC	<i>86-87</i>	<i>12</i>	<i> </i>	<i> </i>	<i> </i>	<i> </i>	87	<i>SAA</i>		<i> </i>	<i> </i>
SC	<i>87-88</i>	<i>12</i>	<i> </i>	<i> </i>	<i> </i>	<i> </i>	88	<i>SAA</i>		<i> </i>	<i> </i>
SC	<i>88-89</i>	<i>12</i>	<i> </i>	<i> </i>	<i> </i>	<i> </i>	89	<i>SAA</i>		<i> </i>	<i> </i>
SC	<i>89-90</i>	<i>12</i>	<i> </i>	<i> </i>	<i> </i>	<i> </i>	90	<i>SAP</i>		<i>↓</i>	<i> </i>
SC	<i>90-91</i>	<i>12</i>	<i> </i>	<i> </i>	<i> </i>	<i> </i>	91	<i>silty SAND, dark gray, wet, loose, very fine to medium grained, well sorted</i>	<i>SP/SM</i>	<i> </i>	<i> </i>
SC	<i>91-92</i>	<i>12</i>	<i> </i>	<i> </i>	<i> </i>	<i> </i>	92	<i>SAA</i>		<i> </i>	<i> </i>
SC	<i>92-93</i>	<i>12</i>	<i> </i>	<i> </i>	<i> </i>	<i> </i>	93	<i>SAA</i>		<i> </i>	<i> </i>
SC	<i>93-94</i>	<i>12</i>	<i> </i>	<i> </i>	<i> </i>	<i> </i>	94	<i>SAA</i>		<i> </i>	<i> </i>
SC	<i>94-95</i>	<i>12</i>	<i> </i>	<i> </i>	<i> </i>	<i> </i>	95	<i>SAP</i>		<i>↓</i>	<i> </i>
SC	<i>95-96</i>	<i>8.4</i>	<i> </i>	<i> </i>	<i> </i>	<i> </i>	96	<i>silty SAND, dark gray, wet, loose, very fine to medium grained, well sorted</i>	<i>SP/SM</i>	<i> </i>	<i> </i>
SC	<i>96-97</i>	<i>8.4</i>	<i> </i>	<i> </i>	<i> </i>	<i> </i>	97	<i>SAA</i>		<i> </i>	<i> </i>
SC	<i>97-98</i>	<i>8.4</i>	<i> </i>	<i> </i>	<i> </i>	<i> </i>	98	<i>SAA</i>		<i> </i>	<i> </i>
SC	<i>98-99</i>	<i>8.4</i>	<i> </i>	<i> </i>	<i> </i>	<i> </i>	99	<i>SAA</i>		<i> </i>	<i> </i>
SC	<i>99-100</i>	<i>8.4</i>	<i> </i>	<i> </i>	<i> </i>	<i> </i>	100	<i>SAA</i>		<i>↓</i>	<i> </i>
SC	<i>100-101</i>	<i>11</i>	<i>↓</i>	<i>↓</i>	<i>↓</i>	<i>↓</i>	101	<i>silty SAND, dark gray, wet, loose, very fine to medium grained, well sorted (silted)</i>	<i>SP/SM</i>	<i>↓</i>	<i>↓</i>

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DEPMW-159		FDEP Facility Identification Number: ERIC-7408		Site Name: PBSC		Borehole Start Date: 2/24/20		End Date: 2/25/20			
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
SC	101-102	11	NA	NA	NA	NA	102	Silty SAND, dark grey, wet, loose, very fine to medium grained, well-sorted	SPW		NA
	102-103	11					103	SAA			
	103-104	11					104	SAA			
	104-105	12					105	SAA			
	105-106	12					106	SAA			
	106-107	12					107	SAA			
	107-108	12					108	SAA			

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DEPMWJ--910		Permit Number: NA		FDEP Facility Identification Number: ERIC-7408	
Site Name: PGCC		Borehole Start Date: 2/25/2020		Borehole Start Time: 1640 <input type="checkbox"/> AM <input checked="" type="checkbox"/> PM	
		End Date: 2/27		End Time: 1630 <input type="checkbox"/> AM <input checked="" type="checkbox"/> PM	
Environmental Contractor: Geosyntec Consultants		Geologist's Name: JJ Hollingshead		Environmental Technician's Name: Joshua Edwards	
Drilling Company: PDS		Pavement Thickness: 0		Borehole Diameter (inches): 6	
				Borehole Depth (feet): 143	
Drilling Method(s): HA, Sonic		Apparent borehole DTW (in ft from soil moisture content): 4		Measured well DTW (in feet after water recharges in well): NM	
				OVA (list model and check type): NA <input type="checkbox"/> FID <input type="checkbox"/> PID	
Disposition of Drill Cuttings [check method(s)]: <input checked="" type="checkbox"/> Drum <input type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other					
(describe if other or multiple items are checked):					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe)					

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-5	6	NA	NA	NA	NA	0.5	^① SAND with silt, dark brown, moist, loose, very fine to medium grained, poorly sorted, trace cm	S ^① WM		NA
HA	5-4	42/62	NA	NA	NA		1	SAA			
HA			NA	NA	NA		2	SAA, concrete debris @ ~2 ft bls			
HA			NA	NA	NA		3	SAND with silt, dark brown, moist, loose, very fine to medium grained, poorly sorted,			
HA			NA	NA	NA		4	SAND with silt, light gray, loose, some very fine to medium grained, poorly sorted	W		
SC	6-10	32/72	NA	NA	NA		5	SAND with silt, light gray, loose, fine to medium grain, poorly sorted			
SC			NA	NA	NA		6	SAA			
SC			NA	NA	NA		7	SAA			
SC			NA	NA	NA		8	SAA			
SC			NA	NA	NA		9	SAA			
SC			NA	NA	NA		10	SAND with silt, light brown, loose, fine to medium grain, poorly sorted			
SC	10-15	46/60	NA	NA	NA		11	SAND w/ silt, light brown, loose, fine to medium grained, poorly sorted			

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 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: <u>DEPMW-910</u>		FDEP Facility Identification: <u>ERIC-7408</u>			Site Name: <u>PBSC</u>		Borehole Start Date: <u>2/25/2020</u> End Date: <u>2/27</u>				
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
SC	12-15	46/60	NA	NA	NA	ND	12	silty SAND, light gray, loose, fine to fine grained, poorly sorted	SW	W	NA
SC			NA	NA	NA		13	SAA			
SC			NA	NA	NA		14	SAA			
SC			NA	NA	NA		15	light gray SAA			
SC	15-20	54/60	NA	NA	NA		16	light gray SAND w/ silt, loose, fine to medium grained, poorly sorted			
SC			NA	NA	NA		17	SAA			
SC			NA	NA	NA		18	SAA			
SC			NA	NA	NA		19	SAA			
SC			NA	NA	NA		20	SAA			
SC	20-25	54/60	NA	NA	NA		21	SAND w/ silt, loose, fine to medium grained, light brown, poorly sorted			
SC			NA	NA	NA		22	SAA			
SC			NA	NA	NA		23	SAA			
SC			NA	NA	NA		24	SAA			
SC			NA	NA	NA		25	SAA			
SC	25-30	60/60	NA	NA	NA		26	SAND w/ silt, loose, fine to medium grained, light brown, poorly sorted			
SC			NA	NA	NA		27	SAA			
SC			NA	NA	NA		28	SAA			
SC			NA	NA	NA		29	SAA			

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 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

*we saturated at 30'-

BORING LOG

Boring/Well Number: <u>DEPMW-910</u>		FDEP Facility Identification: <u>ERIC-7408</u>				Site Name: <u>PASC</u>		Borehole Start Date: <u>2/25/2020</u> End Date: <u>2/27</u>			
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
SC	25-30	60/60	NA	NA	NA	NA	30	SAA light brown	SW	W	NA
SC	30-35	60/60					31	SAND w/ silt, grayish blue, loose, fine to coarse grained, poorly sorted, some shell fragments			
SC							32	SAA			
SC							33	SAA			
SC							34	SAA			
SC							35	SAA			
SC	35-40	58/60					36	SAND w/ silt, grayish blue, loose, fine to coarse grained, poorly sorted, some shell fragments			
SC							37	SAA			
SC							38	SAA			
SC							39	SAA			
SC							40	SAA			
SC	40-45	60/60					41	SAND w/ silt, grayish blue, fine to coarse grained, poorly sorted, some shell fragments			
SC							42	SAA			
SC							43	SAA			
SC							44	SAA			
SC							45	SAA			
SC	45-50	55/60					46	SAND w/ silt, grayish blue, fine to coarse grained, poorly sorted, some shell fragments			
SC							47	SAA			

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 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: <u>DEPMW-910</u>		FDEP Facility Identification: <u>ERIC-7408</u>				Site Name: <u>P.B.S.C.</u>		Borehole Start Date: <u>2/25/2020</u> End Date: <u>2/27</u>			
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
SC	45-50	55/60	NA	NA	NA	NA	48	SAA	sw	W	NA
SC	↓	↓	↓	↓	↓	↓	49	SAA	↓	↓	↓
SC	↓	↓	↓	↓	↓	↓	50	SAA	↓	↓	↓
SC	50-55	36/60	↓	↓	↓	↓	51	SAND w/ silt, dark gray, loose, fine to coarse grained, poorly sorted, 10-30% shell fragments	↓	↓	↓
SC	↓	↓	↓	↓	↓	↓	52	SAA	↓	↓	↓
SC	↓	↓	↓	↓	↓	↓	53	SAA	↓	↓	↓
SC	↓	↓	↓	↓	↓	↓	54	SAA	↓	↓	↓
SC	↓	↓	↓	↓	↓	↓	55	SAA	↓	↓	↓
SC	55-60	60/60	↓	↓	↓	↓	56	SAND w/ silt, dark gray, loose, fine to coarse grained, poorly sorted, ~50% shell fragments	↓	↓	↓
SC	↓	↓	↓	↓	↓	↓	57	SAA	↓	↓	↓
SC	↓	↓	↓	↓	↓	↓	58	SAA	↓	↓	↓
SC	↓	↓	↓	↓	↓	↓	59	SAA along silty clay lens (~3 inches)	↓	↓	↓
SC	↓	↓	↓	↓	↓	↓	60	SAA	↓	↓	↓
SC	60-65	28/60	↓	↓	↓	↓	61	SAND w/ silt, dark gray, loose, fine to coarse grained, poorly sorted, ~10-20% shell fragments	↓	↓	↓
SC	↓	↓	↓	↓	↓	↓	62	SAA	↓	↓	↓
SC	↓	↓	↓	↓	↓	↓	63	SAA	↓	↓	↓
SC	↓	↓	↓	↓	↓	↓	64	SAND w/ silt, dark gray, loose, fine to coarse grained, poorly sorted, ~50% shell fragments	↓	↓	↓
SC	↓	↓	↓	↓	↓	↓	65	SAA	↓	↓	↓

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 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DEPMW-910		FDEP Facility Identification ERIC-7428			Site Name: P.BSC		Borehole Start Date: 2/25/2020 End Date: 2/27				
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
SC	65-70	54/60	NA	NA	NA	NA	66	SAA	SW	W	NA
SC							67	SAA			
SC							68	SAND w/ silt, dark gray, fine to coarse grained, poorly sorted, 10-20% shell fragments			
SC							69	SAA			
SC							70	SAA			
SC	70-75	64/60					71	SAND w/ silt, light gray, fine to coarse grained, poorly sorted	SP.		
SC							72	SAA			
SC							73	SAA			
SC							74	SAA			
SC							75	SAA			
SC	75-80	64/60					76	SAND w/ silt, light gray, fine to coarse grained, poorly sorted			
SC							77	SAA			
SC							78	SAA			
SC							79	SAA			
SC							80	SAA			
SC	80-85	64/60					81	SAND w/ silt, light gray, fine to coarse grained, poorly sorted			
SC							82	SAA			
SC							83	SAA			

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: <i>DEPMW-10</i>		FDEP Facility Identification <i>0</i>		Site Name: <i>0</i>		Borehole Start Date: <i>2/25/2020</i> End Date: <i>2/27</i>					
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
SC	<i>50-52/60</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	84	SAA	<i>W</i>		NA
SC	↓	↓					85	SAA			
SC	<i>85-95/120</i>	<i>55/120</i>					86	SAND w/ silt, dark gray, fine to medium grade, poorly sorted			
SC	↓	↓					87	SAA			
SC	↓	↓					88	SAA			
SC	↓	↓					89	SAA			
SC	↓	↓					90	SAA			
SC	↓	↓					91	SAND w/ silt, dark gray, fine to medium grade, poorly sorted well			
SC	↓	↓					92	SAA			
SC	↓	↓					93	SAA			
SC	↓	↓					94	SAA			
SC	↓	↓					95	SAA			
SC	<i>95-100/120</i>	<i>55/120</i>					96	SAND w/ silt, dark gray, fine to medium graded, well sorted			
SC	↓	↓					97	SAA			
SC	↓	↓					98	SAA			
SC	↓	↓					99	SAA			
SC	↓	↓					100	SAA			
SC	<i>100-105/120</i>	<i>21/60</i>					101	SAND w/ silt, dark gray, ^{loose} fine to medium graded, well sorted			

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 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: <i>DEPMW-10</i>		FDEP Facility Identification Number: <i>ERIC-7408</i>				Site Name: <i>DBSC</i>		Borehole Start Date: <i>2/25/2020</i>		End Date: <i>2/27/2020</i>	
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
<i>SC</i>	<i>100-105</i>	<i>31/60</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>102</i>	<i>SAA</i>	<i>SP</i>	<i>W</i>	<i>NA</i>
							<i>103</i>	<i>SAA</i>			
							<i>104</i>	<i>SAA</i>			
							<i>105</i>	<i>SAA</i>			
	<i>105-110</i>	<i>47/60</i>					<i>106</i>	<i>SAND w/ silt, dark gray, fine to medium grained, well sorted</i>			
							<i>107</i>	<i>SAA</i>			
							<i>108</i>	<i>SAA</i>			
							<i>109</i>	<i>SAA</i>			
	<i>110-115</i>	<i>56/60</i>					<i>110</i>	<i>SAA</i>			
							<i>111</i>	<i>SAND w/ silt, dark gray, fine to medium grained, loose, well sorted</i>			
							<i>112</i>	<i>SAA</i>			
							<i>113</i>	<i>SAA</i>			
							<i>114</i>	<i>SAA</i>			
	<i>115-120</i>	<i>54/60</i>					<i>115</i>	<i>SAA</i>			
							<i>116</i>	<i>SAND w/ silt, dark gray, loose, fine to medium grained, well sorted</i>			
							<i>117</i>	<i>SAA</i>			
							<i>118</i>	<i>SAA</i>			
							<i>119</i>	<i>SAA</i>			

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DEPMW-10		FDEP Facility Identification Number: ERIC-7408			Site Name: PBSC		Borehole Start Date: 2/25/2020 End Date: 2/27/2020				
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
SC	115-120	54/60	NA	NA	NA	NA	120	SAA	SP	W	NA
	120-125	53/60					121	SAND w/ silt, dark gray, loose, fine to medium grained, well sorted			
							122	SAA			
							123	SAA			
							124	SAA			
							125	SAA			
	125-130	60/60					126	SAND w/ silt, dark gray, loose, fine to medium grained, well sorted			
							127	SAA			
							128	SAA			
							129	SAA			
							130	SAA			
	130-135	60/60					131	SAND w/ silt, dark gray, loose, fine to medium grained, well sorted			
							132	SAA			
							133	SAA			
							134	SAA			
							135	SAA			
	135-140	58/60					136	SAND w/ silt, dark gray, loose, fine to medium grained, well sorted			
							137	SAA			

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DEPMW-10		FDEP Facility Identification Number: ERIC-7405			Site Name: PBSC		Borehole Start Date: 2/25/20 End Date: 2/29/20				
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
SC	135-138	58/60	NA	NA	NA	NA	138	SAND w/ silt, light gray wet, loose, fine to coarse, poorly sorted @ medium fine well	SP	W	NA
	↓	↓	↓	↓	↓	↓	139	SAA			↓
	↓	↓	↓	↓	↓	↓	140	SAA			↓
S	140-143	36/36					141	SAND w/ shell fragments, loose, wet, fine to coarse, sorted, poorly sorted, fine fines well			↓
	↓	↓	↓	↓	↓	↓	142	SAA			↓
	↓	↓	↓	↓	↓	↓	143	SAA			↓
							144				
							145				
							146				
							147				
							148				
							149				
							150				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DEPMW-11		Permit Number: MA		FDEP Facility Identification Number: ERIC-7408	
Site Name: PRGC		Borehole Start Date: 2/28/2020 End Date: 2/28		Borehole Start Time: 1125 <input type="checkbox"/> AM <input type="checkbox"/> PM End Time: 1330 <input type="checkbox"/> AM <input checked="" type="checkbox"/> PM	
Environmental Contractor: Geosyntec Consultants		Geologist's Name: -		Environmental Technician's Name: Joshua Vanderdy	
Drilling Company: PDS		Pavement Thickness (inches): 0	Borehole Diameter (inches): 8.6		Borehole Depth (feet): 65
Drilling Method(s): Soniz	Apparent Borehole DTW (in feet from soil moisture content):		Measured Well DTW (in feet after water recharges in well):		OVA (list model and check type): <input type="checkbox"/> FID <input type="checkbox"/> PID
Disposition of Drill Cuttings [check method(s)]: <input checked="" type="checkbox"/> Drum <input type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other <i>(describe if other or multiple items are checked):</i>					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe)					

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description <small>(include grain size based on USCS, odors, staining, and other remarks)</small>	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples <small>(list sample number and depth or temporary screen interval)</small>
PH	NA	NA	NA	NA	NA	NA	1	Please refer to lithology of DEPMW-10	NA	NA	NA
PH	↓	↓	NA	↓	↓	↓	2	↓	↓	↓	
↓	↓	↓	NA	↓	↓	↓	3				
↓	↓	↓	NA	↓	↓	↓	4				
SC	↓	↓	NA	↓	↓	↓	5				
↓	↓	↓	NA	↓	↓	↓	6				
↓	↓	↓	NA	↓	↓	↓	7				
↓	↓	↓	NA	↓	↓	↓	8				
↓	↓	↓	NA	↓	↓	↓	9				
↓	↓	↓	NA	↓	↓	↓	10				
↓	↓	↓	↓	↓	↓	↓	10-65				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DEPMW-12		Permit Number: NA		FDEP Facility Identification Number: ERIC-7408	
Site Name: PBSC		Borehole Start Date: 2/28/2020	Borehole Start Time: 1615	<input type="checkbox"/> AM	<input checked="" type="checkbox"/> PM
		End Date: 2/28	End Time: 1820	<input type="checkbox"/> AM	<input checked="" type="checkbox"/> PM
Environmental Contractor: Geosyntec Consultants		Geologist's Name: -		Environmental Technician's Name: Joshua U...	
Drilling Company: PDS		Pavement Thickness: 0	Borehole Diameter (inches): 6	Borehole Depth (feet): 65	
Drilling Method(s): HA, Sonic	Apparent borehole DTW (in ft from soil moisture content): 24	Measured well DTW (in feet after water recharges in well): NA	OVA (list model and check type): MS <input type="checkbox"/> FID <input type="checkbox"/> PID		
Disposition of Drill Cuttings [check method(s)]: <input checked="" type="checkbox"/> Drum <input type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other					
<i>(describe if other or multiple items are checked):</i>					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe)					

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
PH PH	NA	NA	NA	NA	NA	NA	0.5	Please refer to lithology of DEPMW-9	NA	NA	NA
PH PH			NA	NA	NA		1				
PH PH			NA	NA	NA		2				
PH PH			NA	NA	NA		3				
PH PH			NA	NA	NA		4				
SC			NA	NA	NA		5				
SC			NA	NA	NA		6				
SC			NA	NA	NA		7				
SC			NA	NA	NA		8				
SC			NA	NA	NA		9				
SC			NA	NA	NA		10				
SC			NA	NA	NA		10-65				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DEPMW-13		Permit Number: NA		FDEP Facility Identification Number: NA	
Site Name: Palm Beach State College		Borehole Start Date: 2/29/2020		Borehole Start Time: 1225 <input type="checkbox"/> AM <input checked="" type="checkbox"/> PM	
		End Date: 2/29/2020		End Time: 1445 <input type="checkbox"/> AM <input checked="" type="checkbox"/> PM	
Environmental Contractor: Geosyntec Consultants		Geologist's Name: -		Environmental Technician's Name: Bshua Udeardy	
Drilling Company: PDS		Pavement Thickness: 0		Borehole Diameter (inches): 6	
				Borehole Depth (feet): 65	
Drilling Method(s): HA, Sonic		Apparent borehole DTW (in ft from soil moisture content): 24		Measured well DTW (in feet after water recharges in well): NA	
				OVA (list model and check type): NA <input type="checkbox"/> FID <input type="checkbox"/> PID	
Disposition of Drill Cuttings [check method(s)]: <input checked="" type="checkbox"/> Drum <input type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other					
<i>(describe if other or multiple items are checked):</i>					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe)					

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-4	48/48	NA	NA	NA	NA	0.5	SAND w/ silt, fine to medium graded, loose, well sorted, dark brown	SP	M	NA
HA			NA	NA	NA		1	SAND w/ silt, light gray, fine to medium graded, well sorted loose			
HA			NA	NA	NA		2	SAA			
HA			NA	NA	NA		3	SAA			
HA			NA	NA	NA		4	SAA			
SC	8-10	0/2	NA	NA	NA		5	Not recovered from drill rod	NA	NA	
SC			NA	NA	NA		6	SAA			
SC			NA	NA	NA		7	SAA			
SC			NA	NA	NA		8	SAA			
SC			NA	NA	NA		9	SAA			
SC			NA	NA	NA		10	SAA			
SC	10-15	54/60	NA	NA	NA		11	SAND w/ silt, fine to medium graded, light gray, loose, well sorted			

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DEPMW-13		FDEP Facility Identification NA			Site Name: PBSC		Borehole Start Date: 2/29/2000 End Date: 2/29				
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
SC	10-15	54/60	NA	NA	NA	NA	12	SAA	SP	W	NA
SC	↓	↓	NA	NA	NA	↓	13	SAA	↓	↓	↓
SC	↓	↓	NA	NA	NA	↓	14	SAA	↓	↓	↓
SC	↓	↓	NA	NA	NA	↓	15	SAA	↓	↓	↓
SC	15-20	47/60	NA	NA	NA	↓	16	SAND w/ silt, fine to medium grained, light gray, loose, well sorted	↓	↓	↓
SC	↓	↓	NA	NA	NA	↓	17	SAA	↓	↓	↓
SC	↓	↓	NA	NA	NA	↓	18	SAA	↓	↓	↓
SC	↓	↓	NA	NA	NA	↓	19	SAA	↓	↓	↓
SC	↓	↓	NA	NA	NA	↓	20	SAA	↓	↓	↓
SC	20-25	46/60	NA	NA	NA	↓	21	SAND w/ silt, light gray, loose, fine to medium grained, well sorted	↓	↓	↓
SC	↓	↓	NA	NA	NA	↓	22	SAA	↓	↓	↓
SC	↓	↓	NA	NA	NA	↓	23	SAA	↓	↓	↓
SC	↓	↓	NA	NA	NA	↓	24	SAND w/ silt, brown, loose, fine to coarse grained, well sorted	↓	↓	↓
SC	↓	↓	NA	NA	NA	↓	25	SAA	↓	↓	↓
SC	25-30	24/60	NA	NA	NA	↓	26	SAND w/ silt, bluish gray, loose, fine to coarse grained, well sorted	↓	↓	↓
SC	↓	↓	NA	NA	NA	↓	27	SAA	↓	↓	↓
SC	↓	↓	NA	NA	NA	↓	28	SAA	↓	↓	↓
SC	↓	↓	NA	NA	NA	↓	29	SAA	↓	↓	↓

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DEPMW-13		FDEP Facility Identification NA				Site Name: PBSC		Borehole Start Date: 2/22/2020 End Date: 2/29			
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
SC	25-30	24/60	NA	NA	NA	NA	30	SAA	SPW	W	NA
SC	30-35	53/60					31	SAND w/ silt, bluish gray, loose fine to coarse grained, poorly sorted, 20-30% shell fragments			
SC							32	SAA			
SC							33	SAA			
SC							34	SAA			
SC							35	SAA			
SC	35-40	37/60					36	SAND w/ silt, bluish gray, loose fine to coarse grained, poorly sorted, 20-30% shell fragments			
SC							37	SAA			
SC							38	SAA			
SC							39	SAA			
SC							40	SAA			
SC	40-45	55/60					41	SAND w/ silt, bluish gray, loose, fine to coarse grained, poorly sorted, 20-30% shell fragments			
SC							42	SAA			
SC							43	SAA			
SC							44	SAA			
SC							45	SAA			
SC	45-50	52/60					46	SAND w/ silt, bluish gray, loose, fine to coarse grained, poorly sorted, 20-30% shell fragments			
SC							47	SAA			

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number: DEPMW-13		FDEP Facility Identification NA				Site Name: DBSC		Borehole Start Date: 2/29/2020 End Date: 2/29			
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
SC	50-52	52/60	NA	NA	NA	NA	48	SAND w/ silt, dark brown, loose, fine to coarse grained, poorly sorted, ~10 shell frags.	SW W		NA
SC	↓	↓	↓	↓	↓	↓	49	SAA			
SC	↓	↓	↓	↓	↓	↓	50	SAA			
SC	50-55	65/60					51	SAND w/ silt, light gray, loose fine to coarse grained, poorly sorted			
SC	↓	↓	↓	↓	↓	↓	52	SAA			
SC	↓	↓	↓	↓	↓	↓	53	SAA			
SC	↓	↓	↓	↓	↓	↓	54	SAA			
SC	↓	↓	↓	↓	↓	↓	55	SAA			
SC	55-65	52/60					56	SAND w/ silt, dark gray/black, loose, fine to medium grained, poorly sorted			
SC	↓	↓	↓	↓	↓	↓	57	SAA			
SC	↓	↓	↓	↓	↓	↓	58	SAA			
SC	↓	↓	↓	↓	↓	↓	59	SAA			
SC	↓	↓	↓	↓	↓	↓	60	SAA			
SC	↓	↓	↓	↓	↓	↓	61	SAA			
SC	↓	↓	↓	↓	↓	↓	62	SAA			
SC	↓	↓	↓	↓	↓	↓	63	SAA			
SC	↓	↓	↓	↓	↓	↓	64	SAA			
SC	↓	↓	↓	↓	↓	↓	65	SAA			

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA					
Well Number: DEPMW-1		Site Name: Palm Beach State College (PBSC)		FDEP Facility I.D. Number: ERIC_7408	Well Install Date(s): 2/5/20, 2/6/20
Well Location and Type (check appropriate boxes): <input checked="" type="checkbox"/> On-Site <input type="checkbox"/> Right-of-Way <input type="checkbox"/> Off-Site Private Property <input type="checkbox"/> Above Grade (AG) <input checked="" type="checkbox"/> Flush-to-Grade		Well Purpose: <input type="checkbox"/> Perched Monitoring <input checked="" type="checkbox"/> Shallow (Water-Table) Monitoring <input type="checkbox"/> Intermediate or Deep Monitoring <input type="checkbox"/> Remediation or Other (describe)		Well Install Method: HSA	
If AG, list feet of riser above land surface:				Surface Casing Install Method: NA	
Borehole Depth (feet): 13	Well Depth (feet): 13	Borehole Diameter (inches): 10	Manhole Diameter (inches): N/A	Well Pad Size: 2 feet by 2 feet	
Riser Diameter and Material: 2" PVC		Riser/Screen Connections: <input checked="" type="checkbox"/> Flush-Threaded <input type="checkbox"/> Other (describe)	Riser Length: 3 feet from 0 feet to 3 feet		
Screen Diameter and Material: 2" PVC		Screen Slot Size: 0.010	Screen Length: 10 feet from 3 feet to 13 feet		
1 st Surface Casing Material: also check: <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary		1 st Surface Casing I.D. (inches): 8	1 st Surface Casing Length: _____ feet from _____ feet to _____ feet		
2 nd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		2 nd Surface Casing I.D. (inches):	2 nd Surface Casing Length: _____ feet from _____ feet to _____ feet		
3 rd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		3 rd Surface Casing I.D. (inches):	3 rd Surface Casing Length: _____ feet from _____ feet to _____ feet		
Filter Pack Material and Size: 20/30 sand	Prepacked Filter Around Screen (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Filter Pack Length: 11.5 feet from 1.5 feet to 13 feet		
Filter Pack Seal Material and Size:	30/65 sand		Filter Pack Seal Length: 0.5 feet from 1 feet to 1.5 feet		
Surface Seal Material:	Type 1/11 grout		Surface Seal Length: 0.5 feet from 0.5 feet to 1 feet		

WELL DEVELOPMENT DATA			
Well Development Date: 2/6/20		Well Development Method (check one): <input type="checkbox"/> Surge/Pump <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Compressed Air <input type="checkbox"/> Other (describe)	
Development Pump Type (check): <input checked="" type="checkbox"/> Submersible <input type="checkbox"/> Centrifugal <input type="checkbox"/> Peristaltic <input type="checkbox"/> Other (describe)		Depth to Groundwater (before developing in feet): 4.37	
Pumping Rate (gallons per minute): ~2.3	Maximum Drawdown of Groundwater During Development (feet): 1.19'		Well Purged Dry (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No
Pumping Condition (check one): <input checked="" type="checkbox"/> Continuous <input type="checkbox"/> Intermittent	Total Development Water Removed (gallons): 110	Development Duration (minutes): 47	Development Water Drummed (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Appearance (color and odor) At Start of Development: cloudy		Water Appearance (color and odor) At End of Development: clear	

WELL CONSTRUCTION OR DEVELOPMENT REMARKS
start developing: 808 stop developing: 855

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA					
Well Number: DEPMW-2	Site Name: Palm Beach State College (PBSC)	FDEP Facility I.D. Number: ERIC_7408	Well Install Date(s): 2/5/20, 2/6/20		
Well Location and Type (check appropriate boxes): <input checked="" type="checkbox"/> On-Site <input type="checkbox"/> Right-of-Way <input type="checkbox"/> Off-Site Private Property <input type="checkbox"/> Above Grade (AG) <input checked="" type="checkbox"/> Flush-to-Grade		Well Purpose: <input type="checkbox"/> Perched Monitoring <input checked="" type="checkbox"/> Shallow (Water-Table) Monitoring <input type="checkbox"/> Intermediate or Deep Monitoring <input type="checkbox"/> Remediation or Other (describe)		Well Install Method: HSA	
If AG, list feet of riser above land surface:				Surface Casing Install Method: NA	
Borehole Depth (feet): 13	Well Depth (feet): 13	Borehole Diameter (inches): 10	Manhole Diameter (inches): N/A	Well Pad Size: 2 feet by 2 feet	
Riser Diameter and Material: 2" PVC	Riser/Screen Connections: <input checked="" type="checkbox"/> Flush-Threaded <input type="checkbox"/> Other (describe)			Riser Length: 3 feet from 0 feet to 3 feet	
Screen Diameter and Material: 2" PVC	Screen Slot Size: 0.010			Screen Length: 10 feet from 3 feet to 13 feet	
1 st Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary	1 st Surface Casing I.D. (inches): 10	1 st Surface Casing Length: _____ feet from _____ feet to _____ feet			
2 nd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary	2 nd Surface Casing I.D. (inches):	2 nd Surface Casing Length: _____ feet from _____ feet to _____ feet			
3 rd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary	3 rd Surface Casing I.D. (inches):	3 rd Surface Casing Length: _____ feet from _____ feet to _____ feet			
Filter Pack Material and Size: 20/40 sand	Prepacked Filter Around Screen (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Filter Pack Length: 11.5 feet from 1.5 feet to 13 feet			
Filter Pack Seal Material and Size: 30/60 sand		Filter Pack Seal Length: 0.5 feet from 1 feet to 1.5 feet			
Surface Seal Material: Type 1/11 grout		Surface Seal Length: 0.5 feet from 0.5 feet to 1 feet			

WELL DEVELOPMENT DATA			
Well Development Date: 2/6/20	Well Development Method (check one): <input type="checkbox"/> Surge/Pump <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Compressed Air <input type="checkbox"/> Other (describe)		
Development Pump Type (check): <input type="checkbox"/> Centrifugal <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Submersible <input type="checkbox"/> Other (describe)	Depth to Groundwater (before developing in feet): NA		
Pumping Rate (gallons per minute): ~0.5	Maximum Drawdown of Groundwater During Development (feet): NA	Well Purged Dry (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Pumping Condition (check one): <input checked="" type="checkbox"/> Continuous <input type="checkbox"/> Intermittent	Total Development Water Removed (gallons): ~10.5	Development Duration (minutes): 21	Development Water Drummed (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Appearance (color and odor) At Start of Development: cloudy		Water Appearance (color and odor) At End of Development: clear	

WELL CONSTRUCTION OR DEVELOPMENT REMARKS
<p>start developing: 1005 stop developing: 1026</p>

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA					
Well Number: DEPAW-3		Site Name: Palm Beach State College (PBSC)		FDEP Facility I.D. Number: ERIC_7408	Well Install Date(s): 2/6/20
Well Location and Type (check appropriate boxes): <input checked="" type="checkbox"/> On-Site <input type="checkbox"/> Right-of-Way <input type="checkbox"/> Off-Site Private Property <input type="checkbox"/> Above Grade (AG) <input checked="" type="checkbox"/> Flush-to-Grade		Well Purpose: <input type="checkbox"/> Perched Monitoring <input checked="" type="checkbox"/> Shallow (Water-Table) Monitoring <input type="checkbox"/> Intermediate or Deep Monitoring <input type="checkbox"/> Remediation or Other (describe)		Well Install Method: HSA	
If AG, list feet of riser above land surface:				Surface Casing Install Method: NA	
Borehole Depth (feet): 13	Well Depth (feet): 13	Borehole Diameter (inches): 10	Manhole Diameter (inches): N/A	Well Pad Size: 2 feet by 2 feet	
Riser Diameter and Material: 2" PVC		Riser/Screen Connections: <input checked="" type="checkbox"/> Flush-Threaded <input type="checkbox"/> Other (describe)	Riser Length: 3 feet from 0 feet to 3 feet		
Screen Diameter and Material: 2" PVC		Screen Slot Size: 0.016	Screen Length: 10 feet from 3 feet to 13 feet		
1st Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		1st Surface Casing I.D. (inches): 10		1st Surface Casing Length: from ___ feet to ___ feet	
2nd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		2nd Surface Casing I.D. (inches):		2nd Surface Casing Length: from ___ feet to ___ feet	
3rd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		3rd Surface Casing I.D. (inches):		3rd Surface Casing Length: from ___ feet to ___ feet	
Filter Pack Material and Size: 20/30 sand		Prepacked Filter Around Screen (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Filter Pack Length: 11.5 feet from 1.5 feet to 13 feet	
Filter Pack Seal Material and Size: 30/65 sand		Filter Pack Seal Length: 0.5 feet from 1 feet to 1.5 feet			
Surface Seal Material: Type 1/11 grout		Surface Seal Length: 0.5 feet from 0.5 feet to 1 feet			

WELL DEVELOPMENT DATA			
Well Development Date: 2/6/20		Well Development Method (check one): <input type="checkbox"/> Surge/Pump <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Compressed Air <input type="checkbox"/> Other (describe)	
Development Pump Type (check): <input type="checkbox"/> Centrifugal <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Submersible <input type="checkbox"/> Other (describe)		Depth to Groundwater (before developing in feet): N/A	
Pumping Rate (gallons per minute): ~0.5	Maximum Drawdown of Groundwater During Development (feet): NA	Well Purged Dry (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Pumping Condition (check one): <input checked="" type="checkbox"/> Continuous <input type="checkbox"/> Intermittent	Total Development Water Removed (gallons): ~12.5	Development Duration (minutes): 25	Development Water Drummed (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Appearance (color and odor) At Start of Development: cloudy		Water Appearance (color and odor) At End of Development: clear	

WELL CONSTRUCTION OR DEVELOPMENT REMARKS
1250 - stop developing 1315 - stop developing

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA				
Well Number: DEPMW-4	Site Name: Palm Beach State College (PBSC)	FDEP Facility I.D. Number: ERIC_7408	Well Install Date(s): 2/6/20	
Well Location and Type (check appropriate boxes): <input checked="" type="checkbox"/> On-Site <input type="checkbox"/> Right-of-Way <input type="checkbox"/> Off-Site Private Property <input type="checkbox"/> Above Grade (AG) <input checked="" type="checkbox"/> Flush-to-Grade		Well Purpose: <input type="checkbox"/> Perched Monitoring <input checked="" type="checkbox"/> Shallow (Water-Table) Monitoring <input type="checkbox"/> Intermediate or Deep Monitoring <input type="checkbox"/> Remediation or Other (describe)		Well Install Method: HSA
If AG, list feet of riser above land surface:		Surface Casing Install Method: NA		
Borehole Depth (feet): 13	Well Depth (feet): 13	Borehole Diameter (inches): 10	Manhole Diameter (inches): N/A	Well Pad Size: 2 feet by 2 feet
Riser Diameter and Material: 2" PVC	Riser/Screen Connections: <input checked="" type="checkbox"/> Flush-Threaded <input type="checkbox"/> Other (describe)	Riser Length: 3 feet from 0 feet to 3 feet		
Screen Diameter and Material: 2" PVC		Screen Slot Size: 0.010	Screen Length: 10 feet from 3 feet to 13 feet	
1st Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		1st Surface Casing I.D. (inches): 8 1st Surface Casing Length: _____ feet from _____ feet to _____ feet		
2nd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		2nd Surface Casing I.D. (inches): _____ 2nd Surface Casing Length: _____ feet from _____ feet to _____ feet		
3rd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		3rd Surface Casing I.D. (inches): _____ 3rd Surface Casing Length: _____ feet from _____ feet to _____ feet		
Filter Pack Material and Size: 20/30 sand	Prepacked Filter Around Screen (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Filter Pack Length: 11.5 feet from 1.5 feet to 13 feet	
Filter Pack Seal Material and Size: 30/65 sand			Filter Pack Seal Length: 0.5 feet from 1 feet to 16 feet	
Surface Seal Material: Type 1/11 grout			Surface Seal Length: 0.5 feet from 0.5 feet to 1 feet	

WELL DEVELOPMENT DATA			
Well Development Date: 2/6/20	Well Development Method (check one): <input type="checkbox"/> Surge/Pump <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Compressed Air <input type="checkbox"/> Other (describe)		
Development Pump Type (check): <input type="checkbox"/> Centrifugal <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Submersible <input type="checkbox"/> Other (describe)	Depth to Groundwater (before developing in feet): NA		
Pumping Rate (gallons per minute): 20.5	Maximum Drawdown of Groundwater During Development (feet): NA	Well Purged Dry (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Pumping Condition (check one): <input checked="" type="checkbox"/> Continuous <input type="checkbox"/> Intermittent	Total Development Water Removed (gallons): 215	Development Duration (minutes): 30	Development Water Drummed (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Appearance (color and odor) At Start of Development: cloudy		Water Appearance (color and odor) At End of Development: clear	

WELL CONSTRUCTION OR DEVELOPMENT REMARKS
<p>Start developing: 1330</p> <p>Stop developing: 1400</p>

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA					
Well Number: DEPMW-5		Site Name: Palm Beach State College (PBSC)		FDEP Facility I.D. Number: ERIC_7408	Well Install Date(s): 2/5/20, 2/6/20
Well Location and Type (check appropriate boxes): <input checked="" type="checkbox"/> On-Site <input type="checkbox"/> Right-of-Way <input type="checkbox"/> Off-Site Private Property <input type="checkbox"/> Above Grade (AG) <input checked="" type="checkbox"/> Flush-to-Grade			Well Purpose: <input type="checkbox"/> Perched Monitoring <input checked="" type="checkbox"/> Shallow (Water-Table) Monitoring <input type="checkbox"/> Intermediate or Deep Monitoring <input type="checkbox"/> Remediation or Other (describe)		Well Install Method: HSA
If AG, list feet of riser above land surface:					Surface Casing Install Method: NA
Borehole Depth (feet): 13	Well Depth (feet): 13	Borehole Diameter (inches): 10	Manhole Diameter (inches): N/A	Well Pad Size: 2 feet by 2 feet	
Riser Diameter and Material: 2" PVC		Riser/Screen Connections: <input checked="" type="checkbox"/> Flush-T threaded <input type="checkbox"/> Other (describe)	Riser Length: 0 feet from 0 feet to 3 feet		
Screen Diameter and Material: 2" PVC		Screen Slot Size: 0.00	Screen Length: 10 feet from 3 feet to 13 feet		
1 st Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		1 st Surface Casing I.D. (inches): 8	1 st Surface Casing Length: _____ feet from _____ feet to _____ feet		
2 nd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		2 nd Surface Casing I.D. (inches):	2 nd Surface Casing Length: _____ feet from _____ feet to _____ feet		
3 rd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		3 rd Surface Casing I.D. (inches):	3 rd Surface Casing Length: _____ feet from _____ feet to _____ feet		
Filter Pack Material and Size: 20/30 sand		Prepacked Filter Around Screen (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Filter Pack Length: 11.5 feet from 1.5 feet to 13 feet		
Filter Pack Seal Material and Size: 30/65 sand			Filter Pack Seal Length: 0.5 feet from 1 feet to 1.5 feet		
Surface Seal Material: Type 1/11 grout			Surface Seal Length: 0.5 feet from 0.5 feet to 1 feet		

WELL DEVELOPMENT DATA			
Well Development Date: 2/6/20		Well Development Method (check one): <input type="checkbox"/> Surge/Pump <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Compressed Air <input type="checkbox"/> Other (describe)	
Development Pump Type (check): <input type="checkbox"/> Centrifugal <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Submersible <input type="checkbox"/> Other (describe)		Depth to Groundwater (before developing in feet): NA	
Pumping Rate (gallons per minute): 20.5	Maximum Drawdown of Groundwater During Development (feet): NA	Well Purged Dry (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Pumping Condition (check one): <input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent	Total Development Water Removed (gallons): ~183	Development Duration (minutes): 26	Development Water Drummed (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Appearance (color and odor) At Start of Development: cloudy		Water Appearance (color and odor) At End of Development: clear	

WELL CONSTRUCTION OR DEVELOPMENT REMARKS
<p>Start developing: 929 stop developing: 955</p>

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA					
Well Number: DEPMW-6		Site Name: Palm Beach State College (PBSC)		FDEP Facility I.D. Number: ERIC_7408	
Well Install Date(s): 2/6/2020		Well Location and Type (check appropriate boxes): <input checked="" type="checkbox"/> On-Site <input type="checkbox"/> Right-of-Way <input type="checkbox"/> Off-Site Private Property <input type="checkbox"/> Above Grade (AG) <input checked="" type="checkbox"/> Flush-to-Grade		Well Purpose: <input type="checkbox"/> Perched Monitoring <input checked="" type="checkbox"/> Shallow (Water-Table) Monitoring <input type="checkbox"/> Intermediate or Deep Monitoring <input type="checkbox"/> Remediation or Other (describe)	
If AG, list feet of riser above land surface:		Well Install Method: HSA		Surface Casing Install Method: NA	
Borehole Depth (feet): 13	Well Depth (feet): 13	Borehole Diameter (inches): 10	Manhole Diameter (inches): N/A	Well Pad Size: 2 feet by 2 feet	
Riser Diameter and Material: 2" PVC		Riser/Screen Connections: <input checked="" type="checkbox"/> Flush-Threaded <input type="checkbox"/> Other (describe)	Riser Length: 3 feet from 0 feet to 3 feet		
Screen Diameter and Material: 2" PVC		Screen Slot Size: 0.00	Screen Length: 10 feet from 3 feet to 13 feet		
1 st Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		1 st Surface Casing I.D. (inches): 	1 st Surface Casing Length: ___ feet from ___ feet to ___ feet		
2 nd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		2 nd Surface Casing I.D. (inches):	2 nd Surface Casing Length: ___ feet from ___ feet to ___ feet		
3 rd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		3 rd Surface Casing I.D. (inches):	3 rd Surface Casing Length: ___ feet from ___ feet to ___ feet		
Filter Pack Material and Size: 20/30 sand	Prepacked Filter Around Screen (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Filter Pack Length: 11.5 feet from 1.5 feet to 13 feet		
Filter Pack Seal Material and Size: 30/65 sand			Filter Pack Seal Length: 0.5 feet from 1 feet to 1.5 feet		
Surface Seal Material: Type 1/11 grout			Surface Seal Length: 0.5 feet from 0.5 feet to 1 feet		

WELL DEVELOPMENT DATA			
Well Development Date: 2/6/20		Well Development Method (check one): <input type="checkbox"/> Surge/Pump <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Compressed Air <input type="checkbox"/> Other (describe)	
Development Pump Type (check): <input type="checkbox"/> Centrifugal <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Submersible <input type="checkbox"/> Other (describe)		Depth to Groundwater (before developing in feet): NA	
Pumping Rate (gallons per minute): ~0.5	Maximum Drawdown of Groundwater During Development (feet): NA	Well Purged Dry (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Pumping Condition (check one): <input checked="" type="checkbox"/> Continuous <input type="checkbox"/> Intermittent	Total Development Water Removed (gallons): ~21.5	Development Duration (minutes): 403	Development Water Drummed (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Appearance (color and odor) At Start of Development: cloudy		Water Appearance (color and odor) At End of Development: cloudy	

WELL CONSTRUCTION OR DEVELOPMENT REMARKS
start develop: 1107 End developing: 1150

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA					
Well Number: DEPMW-7		Site Name: Palm Beach State College (PBSC)		FDEP Facility I.D. Number: ERIC_7408	
Well Location and Type (check appropriate boxes): <input checked="" type="checkbox"/> On-Site <input type="checkbox"/> Right-of-Way <input type="checkbox"/> Off-Site Private Property <input type="checkbox"/> Above Grade (AG) <input checked="" type="checkbox"/> Flush-to-Grade		Well Purpose: <input type="checkbox"/> Perched Monitoring <input checked="" type="checkbox"/> Shallow (Water-Table) Monitoring <input type="checkbox"/> Intermediate or Deep Monitoring <input type="checkbox"/> Remediation or Other (describe)		Well Install Date(s): 2/5/20, 2/6/20	
If AG, list feet of riser above land surface:				Well Install Method: HTSA	
Borehole Depth (feet): 13		Well Depth (feet): 13		Borehole Diameter (inches): 10	
Manhole Diameter (inches): N/A		Well Pad Size: 2 feet by 2 feet			
Riser Diameter and Material: 2" PVC		Riser/Screen Connections: <input checked="" type="checkbox"/> Flush-T threaded <input type="checkbox"/> Other (describe)		Riser Length: 3 feet from 0 feet to 3 feet	
Screen Diameter and Material: 2" PVC		Screen Slot Size: 0.010		Screen Length: 60 feet from 3 feet to 0 feet	
1st Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		1st Surface Casing I.D. (inches): 10		1st Surface Casing Length: _____ feet from _____ feet to _____ feet	
2nd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		2nd Surface Casing I.D. (inches):		2nd Surface Casing Length: _____ feet from _____ feet to _____ feet	
3rd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		3rd Surface Casing I.D. (inches):		3rd Surface Casing Length: _____ feet from _____ feet to _____ feet	
Filter Pack Material and Size: 20/40 sand		Prepacked Filter Around Screen (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Filter Pack Length: 11.5 feet from 1.5 feet to 13 feet	
Filter Pack Seal Material and Size: 30/65 sand				Filter Pack Seal Length: 0.5 feet from 1 feet to 1.5 feet	
Surface Seal Material: Type 1/11 grout				Surface Seal Length: 0.5 feet from 0.5 feet to 1 feet	

WELL DEVELOPMENT DATA			
Well Development Date: 2/6/20		Well Development Method (check one): <input type="checkbox"/> Surge/Pump <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Compressed Air <input type="checkbox"/> Other (describe)	
Development Pump Type (check): <input type="checkbox"/> Centrifugal <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Submersible <input type="checkbox"/> Other (describe)		Depth to Groundwater (before developing in feet): NA	
Pumping Rate (gallons per minute): 20.5		Maximum Drawdown of Groundwater During Development (feet): NA	
Pumping Condition (check one): <input checked="" type="checkbox"/> Continuous <input type="checkbox"/> Intermittent		Well Purged Dry (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Total Development Water Removed (gallons): ~12.5		Development Duration (minutes): 25	
Development Water Drummed (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Water Appearance (color and odor) At Start of Development: cloudy		Water Appearance (color and odor) At End of Development: clear	

WELL CONSTRUCTION OR DEVELOPMENT REMARKS
<p>Start developing: 1035</p> <p>Stop developing: 1100</p>

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA					
Well Number: DEPMW-8		Site Name: Palm Beach State College (PBSC)		FDEP Facility I.D. Number: ERIC_7408	Well Install Date(s): 2/5/20, 2/6/20
Well Location and Type (check appropriate boxes): <input checked="" type="checkbox"/> On-Site <input type="checkbox"/> Right-of-Way <input type="checkbox"/> Off-Site Private Property <input type="checkbox"/> Above Grade (AG) <input checked="" type="checkbox"/> Flush-to-Grade		Well Purpose: <input type="checkbox"/> Perched Monitoring <input checked="" type="checkbox"/> Shallow (Water-Table) Monitoring <input type="checkbox"/> Intermediate or Deep Monitoring <input type="checkbox"/> Remediation or Other (describe)		Well Install Method: HSA	
If AG, list feet of riser above land surface:				Surface Casing Install Method: NA	
Borehole Depth (feet): 13	Well Depth (feet): 13	Borehole Diameter (inches): 10	Manhole Diameter (inches): N/A	Well Pad Size: 2 feet by 2 feet	
Riser Diameter and Material: 2" PVC		Riser/Screen Connections: <input checked="" type="checkbox"/> Flush-Threaded <input type="checkbox"/> Other (describe)	Riser Length: 3 feet from 0 feet to 3 feet		
Screen Diameter and Material: 2" PVC		Screen Slot Size: 0.010	Screen Length: 16 feet from 3 feet to 13 feet		
1st Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		1st Surface Casing I.D. (inches): 8	1st Surface Casing Length: _____ feet from _____ feet to _____ feet		
2nd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		2nd Surface Casing I.D. (inches):	2nd Surface Casing Length: _____ feet from _____ feet to _____ feet		
3rd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		3rd Surface Casing I.D. (inches):	3rd Surface Casing Length: _____ feet from _____ feet to _____ feet		
Filter Pack Material and Size: 20/30 sand	Prepacked Filter Around Screen (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Filter Pack Length: 11.5 feet from 1.5 feet to 13 feet		
Filter Pack Seal Material and Size: 30/65 sand			Filter Pack Seal Length: 0.5 feet from 10.0 feet to 1.5 feet		
Surface Seal Material: Type 1/11 grout			Surface Seal Length: 0.5 feet from 0.5 feet to 0.5 feet		

WELL DEVELOPMENT DATA			
Well Development Date: 2/6/20		Well Development Method (check one): <input type="checkbox"/> Surge/Pump <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Compressed Air <input type="checkbox"/> Other (describe)	
Development Pump Type (check): <input type="checkbox"/> Centrifugal <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Submersible <input type="checkbox"/> Other (describe)		Depth to Groundwater (before developing in feet): NA	
Pumping Rate (gallons per minute): ~0.5	Maximum Drawdown of Groundwater During Development (feet): NA	Well Purged Dry (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Pumping Condition (check one): <input checked="" type="checkbox"/> Continuous <input type="checkbox"/> Intermittent	Total Development Water Removed (gallons): ~14	Development Duration (minutes): 28	Development Water Drummed (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Appearance (color and odor) At Start of Development: cloudy		Water Appearance (color and odor) At End of Development: clear	

WELL CONSTRUCTION OR DEVELOPMENT REMARKS
developing start: 1410 developing stop: 1438

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA				
Well Number: DEPMW-18 9 (85-105')	Site Name: Palm Beach State College (PBSC)	FDEP Facility I.D. Number: ERIC_7408	Well Install Date(s): 2/25/2020	
Well Location and Type (check appropriate boxes): <input checked="" type="checkbox"/> On-Site <input type="checkbox"/> Right-of-Way <input type="checkbox"/> Off-Site Private Property <input type="checkbox"/> Above Grade (AG) <input checked="" type="checkbox"/> Flush-to-Grade		Well Purpose: <input type="checkbox"/> Perched Monitoring <input type="checkbox"/> Shallow (Water-Table) Monitoring <input checked="" type="checkbox"/> Intermediate or Deep Monitoring <input type="checkbox"/> Remediation or Other (describe)		Well Install Method: ⊕ HSA Sonic
If AG, list feet of riser above land surface:		Surface Casing Install Method: NA		
Borehole Depth (feet): 105	Well Depth (feet): 105	Borehole Diameter (inches): 6	Manhole Diameter (inches): 8	Well Pad Size: NA 2 feet by 2 feet
Riser Diameter and Material: 2" Sch. 40 PVC	Riser/Screen Connections: <input checked="" type="checkbox"/> Flush-T Threaded <input type="checkbox"/> Other (describe)	Riser Length: 85 feet from 0 feet to 85 feet		
Screen Diameter and Material: 2" Sch. 40 PVC		Screen Slot Size: 0.010"	Screen Length: 20 feet from 85 feet to 105 feet	
1st Surface Casing Material: also check: <input type="checkbox"/> Permanent <input checked="" type="checkbox"/> Temporary		1st Surface Casing I.D. (inches): 1 7/8 (77/64) 1st Surface Casing Length: 0 feet to 0 feet		
2nd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		2nd Surface Casing I.D. (inches): NA 2nd Surface Casing Length: 0 feet to 0 feet		
3rd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		3rd Surface Casing I.D. (inches): NA 3rd Surface Casing Length: 0 feet to 0 feet		
Filter Pack Material and Size: 30/60 silica sand	Prepacked Filter Around Screen (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Filter Pack Length: 22 feet from 83 feet to 105 feet	
Filter Pack Seal Material and Size: a bags bentonite 1 bag			Filter Pack Seal Length: 4 feet from 79 feet to 83 feet	
Surface Seal Material: Portland Type I/II cement grout			Surface Seal Length: 79 feet from 0 feet to 79 feet	
WELL DEVELOPMENT DATA				
Well Development Date: 2/27/2020	Well Development Method (check one): <input type="checkbox"/> Surge/Pu <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Compressed Air <input type="checkbox"/> Other (describe)			
Development Pump Type (check): <input checked="" type="checkbox"/> Submersible <input type="checkbox"/> Centrifugal <input type="checkbox"/> Peristaltic <input type="checkbox"/> Other (describe)		Depth to Groundwater (before developing in feet): 2.81 BTOC		
Pumping Rate (gallons per minute): ~1	Maximum Drawdown of Groundwater During Development (feet): 14.61 BTOC	Well Purged Dry (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Pumping Condition (check one): <input checked="" type="checkbox"/> Continuous <input type="checkbox"/> Intermittent	Total Development Water Removed (gallons): 54	Development Duration (minutes): 56	Development Water Drummed (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Water Appearance (color and odor) At Start of Development: cloudy		Water Appearance (color and odor) At End of Development: clear		
WELL CONSTRUCTION OR DEVELOPMENT REMARKS				
start: 907 > development stop: 1003				

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number: DEPMW-16(87-107)		Site Name: Palm Beach State College (PBSC)		FDEP Facility I.D. Number: ERIC_7408	Well Install Date(s): 2/27/20
Well Location and Type (check appropriate boxes): <input checked="" type="checkbox"/> On-Site <input type="checkbox"/> Right-of-Way <input type="checkbox"/> Off-Site Private Property <input type="checkbox"/> Above Grade (AG) <input checked="" type="checkbox"/> Flush-to-Grade			Well Purpose: <input type="checkbox"/> Perched Monitoring <input type="checkbox"/> Shallow (Water-Table) Monitoring <input checked="" type="checkbox"/> Intermediate or Deep Monitoring <input type="checkbox"/> Remediation or Other (describe)		Well Install Method: HSA Sn-2
If AG, list feet of riser above land surface:			Surface Casing Install Method: NA		
Borehole Depth (feet): 143	Well Depth (feet): 107	Borehole Diameter (inches): 8	Manhole Diameter (inches): 8	Well Pad Size: NA 2 feet by 2 feet	
Riser Diameter and Material: 2" Sch. 40 PVC		Riser/Screen Connections: <input checked="" type="checkbox"/> Flush-Threaded <input type="checkbox"/> Other (describe)	Riser Length: 87 feet from 8 feet to 87 feet		
Screen Diameter and Material: 2" Sch. 40 PVC		Screen Slot Size: 0.010"	Screen Length: 87 feet from 87 feet to 107 feet		
1 st Surface Casing Material: also check: <input type="checkbox"/> Permanent <input checked="" type="checkbox"/> Temporary		1 st Surface Casing I.D. (inches): 8	1 st Surface Casing Length: 90 feet from 0 feet to 90 feet		
2nd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		2nd Surface Casing I.D. (inches): NA	2nd Surface Casing Length: _____ feet from 0 feet to _____ feet		
3rd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		3rd Surface Casing I.D. (inches): NA	3rd Surface Casing Length: _____ feet from 0 feet to _____ feet		
Filter Pack Material and Size: 30/60 silica sand	Prepacked Filter Around Screen (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Filter Pack Length: 205 feet from 83 feet to 107 feet		
Filter Pack Seal Material and Size: no bags	bentonite		Filter Pack Seal Length: 4 feet from 79 feet to 83 feet		
Surface Seal Material: Portland Type I/II cement grout		Surface Seal Length: 79 feet from 0 feet to 79 feet			

WELL DEVELOPMENT DATA

Well Development Date: 2/28/2020		Well Development Method (check one): <input checked="" type="checkbox"/> Surge/Pu <input type="checkbox"/> Pump <input type="checkbox"/> Compressed Air <input type="checkbox"/> Other (describe)			
Development Pump Type (check): <input type="checkbox"/> Centrifugal <input type="checkbox"/> Peristaltic <input checked="" type="checkbox"/> Submersible <input type="checkbox"/> Other (describe)		Depth to Groundwater (before developing in feet): 3.21			
Pumping Rate (gallons per minute): ~2		Maximum Drawdown of Groundwater During Development (feet): NA		Well Purged Dry (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Pumping Condition (check one): <input checked="" type="checkbox"/> Continuous <input type="checkbox"/> Intermittent		Total Development Water Removed (gallons): 53	Development Duration (minutes): 25	Development Water Drummed (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Water Appearance (color and odor) At Start of Development: cloudy			Water Appearance (color and odor) At End of Development: clear		

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

**1610 - start
1637 - stop**

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA			
Well Number: <u>DEPMW-11(45-65)</u>	Site Name: <u>Palm Beach State College (PBSC)</u>	FDEP Facility I.D. Number: <u>ERIC_7408</u>	Well Install Date(s): <u>2/28/2020</u>
Well Location and Type (check appropriate boxes): <input checked="" type="checkbox"/> On-Site <input type="checkbox"/> Right-of-Way <input type="checkbox"/> Off-Site Private Property <input type="checkbox"/> Above Grade (AG) <input checked="" type="checkbox"/> Flush-to-Grade		Well Purpose: <input type="checkbox"/> Perched Monitoring <input type="checkbox"/> Shallow (Water-Table) Monitoring <input checked="" type="checkbox"/> Intermediate or Deep Monitoring <input type="checkbox"/> Remediation or Other (describe)	Well Install Method: <u>Ⓟ</u> <u>H8A sonic</u>
If AG, list feet of riser above land surface:		Surface Casing Install Method: <u>NA</u>	
Borehole Depth (feet): <u>65</u>	Well Depth (feet): <u>65</u>	Borehole Diameter (inches): <u>6</u>	Manhole Diameter (inches): <u>8</u>
Well Pad Size: <u>NA</u>		<u>2</u> feet by <u>2</u> feet	
Riser Diameter and Material: <u>2" Sch. 40 PVC</u>	Riser/Screen Connections: <input checked="" type="checkbox"/> Flush-Threaded <input type="checkbox"/> Other (describe)	Riser Length: <u>45</u> feet from <u>0</u> feet to <u>45</u> feet	
Screen Diameter and Material: <u>2" Sch. 40 PVC</u>	Screen Slot Size: <u>0.010"</u>	Screen Length: <u>20</u> feet <u>Ⓟ</u> from <u>45</u> feet to <u>65</u> feet	
1 st Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary	1 st Surface Casing I.D. (inches): <u>Ⓟ</u>	1 st Surface Casing Length: _____ feet from <u>0</u> feet to _____ feet	
2 nd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary	2 nd Surface Casing I.D. (inches): <u>NA</u>	2 nd Surface Casing Length: _____ feet from <u>0</u> feet to _____ feet	
3 rd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary	3 rd Surface Casing I.D. (inches): <u>NA</u>	3 rd Surface Casing Length: _____ feet from <u>0</u> feet to _____ feet	
Filter Pack Material and Size: <u>30/60 silica sand</u>	Prepacked Filter Around Screen (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Filter Pack Length: <u>Ⓟ 22</u> feet from <u>43</u> feet to <u>65</u> feet	
Filter Pack Seal Material and Size: <u>8 bags bentonite</u>		Filter Pack Seal Length: <u>Ⓟ 34</u> feet from <u>40</u> feet to <u>43</u> feet	
Surface Seal Material: <u>Portland Type I/II cement grout</u>		Surface Seal Length: <u>40</u> feet from <u>0</u> feet to <u>40</u> feet	
WELL DEVELOPMENT DATA			
Well Development Date: <u>2/19/2020</u>	Well Development Method (check one): <input checked="" type="checkbox"/> Surge/Pu <input type="checkbox"/> Pump <input type="checkbox"/> Compressed Air <input type="checkbox"/> Other (describe)		
Development Pump Type (check): <input checked="" type="checkbox"/> Submersible <input type="checkbox"/> Centrifugal <input type="checkbox"/> Peristaltic <input type="checkbox"/> Other (describe)	Depth to Groundwater (before developing in feet): <u>3.07</u>		
Pumping Rate (gallons per minute): <u>22</u>	Maximum Drawdown of Groundwater During Development (feet): <u>NA</u>	Well Purged Dry (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Pumping Condition (check one): <input checked="" type="checkbox"/> Continuous <input type="checkbox"/> Intermittent	Total Development Water Removed (gallons): <u>55</u>	Development Duration (minutes): <u>27</u>	Development Water Drummed (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Appearance (color and odor) At Start of Development: <u>cloudy</u>		Water Appearance (color and odor) At End of Development: <u>clear</u>	
WELL CONSTRUCTION OR DEVELOPMENT REMARKS			
<u>NA</u>			

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA					
Well Number: <u>DEDMW-12(45-65)</u>		Site Name: <u>Palm Beach State College (PBSC)</u>		FDEP Facility I.D. Number: <u>ERIC_7408</u>	
Well Install Date(s): <u>2/28</u>		Well Purpose: <input type="checkbox"/> Perched Monitoring <input type="checkbox"/> Shallow (Water-Table) Monitoring <input checked="" type="checkbox"/> Intermediate or Deep Monitoring <input type="checkbox"/> Remediation or Other (describe)		Well Install Method: <u>HSA [⊕] Soil</u>	
Well Location and Type (check appropriate boxes): <input checked="" type="checkbox"/> On-Site <input type="checkbox"/> Right-of-Way <input type="checkbox"/> Off-Site Private Property <input type="checkbox"/> Above Grade (AG) <input checked="" type="checkbox"/> Flush-to-Grade		If AG, list feet of riser above land surface:		Surface Casing Install Method: <u>NA</u>	
Borehole Depth (feet): <u>65</u>	Well Depth (feet): <u>65</u>	Borehole Diameter (inches): <u>6</u>	Manhole Diameter (inches): <u>8</u>	Well Pad Size: <u>NA</u> <u>2</u> feet by <u>2</u> feet	
Riser Diameter and Material: <u>2" Sch. 40 PVC</u>		Riser/Screen Connections: <input checked="" type="checkbox"/> Flush-Threaded <input type="checkbox"/> Other (describe)		Riser Length: <u>45</u> feet from <u>0</u> feet to <u>45</u> feet	
Screen Diameter and Material: <u>2" Sch. 40 PVC</u>		Screen Slot Size: <u>0.010"</u>		Screen Length: <u>20.10</u> feet from <u>45</u> feet to <u>65</u> feet	
1st Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		1st Surface Casing I.D. (inches): <u>⊕</u>		1st Surface Casing Length: _____ feet from <u>0</u> feet to _____ feet	
2nd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		2nd Surface Casing I.D. (inches): <u>NA</u>		2nd Surface Casing Length: _____ feet from <u>0</u> feet to _____ feet	
3rd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		3rd Surface Casing I.D. (inches): <u>NA</u>		3rd Surface Casing Length: _____ feet from <u>0</u> feet to _____ feet	
Filter Pack Material and Size: <u>30/60 silica sand</u>		Prepacked Filter Around Screen (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No		Filter Pack Length: <u>⊕ 22.12</u> feet from <u>43</u> feet to <u>65</u> feet	
Filter Pack Seal Material and Size: <u>7 bags bentonite</u>		Filter Pack Seal Length: <u>⊕ 34</u> feet from <u>⊕ 40</u> feet to <u>⊕ 74</u> feet		Surface Seal Length: <u>40</u> feet from <u>0</u> feet to <u>40</u> feet	
Surface Seal Material: <u>Portland Type I/II cement grout</u>					
WELL DEVELOPMENT DATA					
Well Development Date: <u>2/29/2020</u>		Well Development Method (check one): <input checked="" type="checkbox"/> Surge/Pu <input type="checkbox"/> Pump <input type="checkbox"/> Compressed Air <input type="checkbox"/> Other (describe)			
Development Pump Type (check): <input checked="" type="checkbox"/> Submersible <input type="checkbox"/> Other (describe)		<input type="checkbox"/> Centrifugal <input type="checkbox"/> Peristaltic		Depth to Groundwater (before developing in feet): <u>2.86</u>	
Pumping Rate (gallons per minute): <u>~2.5</u>		Maximum Drawdown of Groundwater During Development (feet): <u>NA</u>		Well Purged Dry (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Pumping Condition (check one): <input checked="" type="checkbox"/> Continuous <input type="checkbox"/> Intermittent		Total Development Water Removed (gallons): <u>54</u>		Development Duration (minutes): <u>22</u>	
Development Water Drummed (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Water Appearance (color and odor) At Start of Development: <u>cloudy</u>			
Water Appearance (color and odor) At End of Development: <u>clear</u>					
WELL CONSTRUCTION OR DEVELOPMENT REMARKS					
<u>start: 908</u>					

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA				
Well Number: <u>DEPMW-13(45-65')</u>	Site Name: <u>Palm Beach State College (PBSC)</u>	FDEP Facility I.D. Number: <u>ERIC_7408</u>	Well Install Date(s): <u>2/19/20</u>	
Well Location and Type (check appropriate boxes): <input checked="" type="checkbox"/> On-Site <input type="checkbox"/> Right-of-Way <input type="checkbox"/> Off-Site Private Property <input type="checkbox"/> Above Grade (AG) <input checked="" type="checkbox"/> Flush-to-Grade		Well Purpose: <input type="checkbox"/> Perched Monitoring <input type="checkbox"/> Shallow (Water-Table) Monitoring <input checked="" type="checkbox"/> Intermediate or Deep Monitoring <input type="checkbox"/> Remediation or Other (describe)		Well Install Method: <u>HSA</u>
If AG, list feet of riser above land surface:				Surface Casing Install Method: <u>NA</u>
Borehole Depth (feet): <u>65</u>	Well Depth (feet): <u>65</u>	Borehole Diameter (inches): <u>6</u>	Manhole Diameter (inches): <u>8</u>	Well Pad Size: <u>NA</u> <u>2</u> feet by <u>2</u> feet
Riser Diameter and Material: <u>2" Sch. 40 PVC</u>	Riser/Screen Connections: <input checked="" type="checkbox"/> Flush-Threaded <input type="checkbox"/> Other (describe)	Riser Length: <u>45</u> feet from ___ feet to ___ feet		
Screen Diameter and Material: <u>2" Sch. 40 PVC</u>		Screen Slot Size: <u>0.010"</u>	Screen Length: <u>20-10</u> feet <u>⊕</u> from <u>45</u> feet to <u>65</u> feet	
1st Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		1st Surface Casing I.D. (inches): <u>⊕</u>	1st Surface Casing Length: ___ feet from <u>0</u> feet to ___ feet	
2nd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		2nd Surface Casing I.D. (inches): <u>NA</u>	2nd Surface Casing Length: ___ feet from <u>0</u> feet to ___ feet	
3rd Surface Casing Material: also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		3rd Surface Casing I.D. (inches): <u>NA</u>	3rd Surface Casing Length: ___ feet from <u>0</u> feet to ___ feet	
Filter Pack Material and Size: <u>30/60 silica sand</u>	Prepacked Filter Around Screen (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Filter Pack Length: <u>⊕ 22</u> feet from <u>43</u> feet to <u>65</u> feet	
Filter Pack Seal Material and Size: <u>8 bags bentonite</u>			Filter Pack Seal Length: <u>⊕ 34</u> feet from <u>40</u> feet to <u>43</u> feet	
Surface Seal Material: <u>Portland Type I/II cement grout</u>			Surface Seal Length: <u>40</u> feet from <u>0</u> feet to <u>40</u> feet	
WELL DEVELOPMENT DATA				
Well Development Date: <u>2/19/20</u>		Well Development Method (check one): <input checked="" type="checkbox"/> Surge/Pu <input type="checkbox"/> Pump <input type="checkbox"/> Compressed Air <input type="checkbox"/> Other (describe)		
Development Pump Type (check): <input checked="" type="checkbox"/> Submersible <input type="checkbox"/> Centrifugal <input type="checkbox"/> Peristaltic <input type="checkbox"/> Other (describe)		Depth to Groundwater (before developing in feet): <u>428</u>		
Pumping Rate (gallons per minute): <u>~1</u>	Maximum Drawdown of Groundwater During Development (feet): <u>NA</u>	Well Purged Dry (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Pumping Condition (check one): <input checked="" type="checkbox"/> Continuous <input type="checkbox"/> Intermittent	Total Development Water Removed (gallons): <u>~30</u>	Development Duration (minutes): <u>30</u>	Development Water Drummed (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Water Appearance (color and odor) At Start of Development: <u>cloudy</u>		Water Appearance (color and odor) At End of Development: <u>clear</u>		
WELL CONSTRUCTION OR DEVELOPMENT REMARKS				
<u>NA</u>				

Geosyntec Consultants
Water Quality Instrument Calibration Form

Project/Site: PBSC

Project #: FR3630B

Field Personnel: Andrew Galun

Water Quality Meter - Model/Serial#: YSI 556 MPS #20279

Turbidimeter - Model/Serial#: HACH 2100Q #21788

Dissolved Oxygen	DEP SOP FT 1500	Date	Time	Temp (°C)	Saturation (mg/L) ¹	Reading (mg/L)	Reading (%)	Pass or Fail
Acceptance Criteria: +/- 0.3 mg/L								
CAL ICV CCV		3/4/20	1045	26.6	8.026	8.02	100%	P F
CAL ICV CCV		↓	1816	27.8	7.98	8.12	109%	P F
CAL ICV CCV								P F
CAL ICV CCV								P F

Specific Conductance	DEP SOP FT 1200	Date	Time	Standard (mS/cm)	Standard Lot #	Standard Exp. Date	Reading (mS/cm)	Pass or Fail
Acceptance Criteria: +/- 5%								
CAL ICV CCV		3/4/20	1039	1.413	96A296	Jan 2020	1.413	P F
CAL ICV CCV		↓	1800	1.413			1.464	P F
CAL ICV CCV								P F
CAL ICV CCV								P F
CAL ICV CCV								P F
CAL ICV CCV								P F

pH	DEP SOP FT 1100	Date	Time	Standard (SU)	Standard Lot #	Standard Exp. Date	Reading (SU)	Pass or Fail
Acceptance Criteria: +/- 0.2 SU								
CAL ICV CCV		3/4/20	1030	7.00	96B719	2/21	7.00	P F
CAL ICV CCV		↓	1033	4.00	96C044	3/21	4.00	P F
CAL ICV CCV			1036	6.00	96B956	2/21	6.00	P F
CAL ICV CCV		↓	1745	7.00	96B719	2/21	7.01	P F
CAL ICV CCV			1750	4.00	96C044	3/21	4.05	P F
CAL ICV CCV			1755	10.0	96B956	2/21	10.12	P F

ORP	SOP N/A	Date	Time	Std. mV @ Temp °C	Standard Lot #	Standard Exp. Date	Reading (mV)	Pass or Fail
Geosyntec Acceptance Criteria: +/- 5%								
CAL ICV CCV		3/4/20	1042	240	96D336	1/20	240.0	P F
CAL ICV CCV		↓	1805	240			230.2	P F
CAL ICV CCV								P F
CAL ICV CCV								P F

Specific Conductance Probe Cleaned? Yes No Dissolved Oxygen Membrane Changed? Yes No

0.1 - 10 NTU	Date	Reading (NTU)	Pass or Fail
Std <u>10</u> NTU			
Acceptance Criteria: +/- 10%			
CAL ICV CCV	3/4/20	9.89	P F
CAL ICV CCV	↓	10.2	P F
CAL ICV CCV			P F
CAL ICV CCV			P F

11 - 40 NTU	Date	Reading (NTU)	Pass or Fail
Std <u>20</u> NTU			
Acceptance Criteria: +/- 8%			
CAL ICV CCV	3/4/20	20.3	P F
CAL ICV CCV	↓	20.1	P F
CAL ICV CCV			P F
CAL ICV CCV			P F
CAL ICV CCV			P F
CAL ICV CCV			P F

41 - 100 NTU	Date	Reading (NTU)	Pass or Fail
Std <u>100</u> NTU			
Acceptance Criteria: +/- 6.5%			
CAL ICV CCV	3/4/20	100	P F
CAL ICV CCV	↓	98.6	P F
CAL ICV CCV			P F
CAL ICV CCV			P F
CAL ICV CCV			P F
CAL ICV CCV			P F

>100 NTU	Date	Reading (NTU)	Pass or Fail
Std <u>900</u> NTU			
Acceptance Criteria: +/- 5%			
CAL ICV CCV	3/4/20	803	P F
CAL ICV CCV	↓	817	P F
CAL ICV CCV			P F
CAL ICV CCV			P F

1. See Table FS 2200-2 on the back of this form

- CAL - Initial Calibration
- ICV - Initial Calibration Verification
- CCV - Continuing Calibration Verification

Allow adequate time for the dissolved oxygen sensor to equilibrate during air calibration
 Calibrate specific conductance using at least two standards that bracket the range of expected sample readings (unless readings <0.1 mS/cm is acceptable)
 Calibrate pH using at least two standards (typ. pH 4 and 7) that bracket the range of expected sample readings; always start with pH 7; add a third calibration point if needed (i.e. pH > 7)
 If parameter fails to calibrate within SOP acceptance criteria then append sample results with a "J" qualifier

Comments: _____



Meter ID: D

Form FD 9000-24
GROUND WATER SAMPLING LOG

SITE NAME: PBSC	SITE LOCATION: Lumbana
WELL NO: DEPMW-1 (3-13')	SAMPLE ID: _____
DATE: 3/4/20	

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE:							
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (13 feet - 4.3 feet) X 0.16 gallons/foot = 1.4 gallons											
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable) = _____ gallons + (_____ gallons/foot X _____ feet) + _____ gallons = _____ gallons											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 10:05	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):							
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP
10:20	1.5	1.5	.1	4.34	6.79	25.8	305	4.22, 0.34	NA	none	983
10:25	.5	2.0	.1	4.31	6.80	26.0	306	3.77, 0.30	NA	none	994
10:30	.5	2.5	.1	4.35	6.80	26.0	306	8.32, 0.67	NA	none	987
WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016 PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)											

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: (SIS) Site Investigation Section	SAMPLER(S) SIGNATURE(S): 	SAMPLING INITIATED AT: 10:30	SAMPLING ENDED AT:
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y <input type="checkbox"/> N <input type="checkbox"/>	FILTER SIZE: _____ µm
FIELD DECONTAMINATION: PUMP Y <input type="checkbox"/> N <input type="checkbox"/>	TUBING Y <input type="checkbox"/> N <input type="checkbox"/>	(replaced)	DUPLICATE: Y <input type="checkbox"/> N <input type="checkbox"/>
SAMPLE CONTAINER SPECIFICATION		SAMPLE PRESERVATION	
SAMPLE ID CODE	# BTLs	MATERIAL CODE	VOLUME
		PRESERV. USED	TOTAL VOL ADDED IN FIELD (mL)
		FINAL pH	ANALYTICAL METHOD
			SAMP. EQUIP. CODE
			FLOW RATE (mL/minute)
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify) SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)			

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
 2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
 pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Notes:

**Form FD 9000-24
GROUNDWATER SAMPLING LOG**

SITE NAME: PBSC	SITE LOCATION: Lake Worth, FL
WELL NO: DEPMW-9(85-105')	SAMPLE ID: DEPMW-9(85-105') DATE: 3/4/20

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 95 feet to 105 feet	STATIC DEPTH TO WATER (feet): 2.76'	PURGE PUMP TYPE OR BAILER: PP
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (105 feet - 2.76 feet) X 0.16 gallons/foot = 16.35 gallons				
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable) = _____ gallons + (_____ gallons/foot X _____ feet) + _____ gallons = _____ gallons				

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 1215	PURGING ENDED AT: 1316	TOTAL VOLUME PURGED (gallons): 16.7							
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1310	16.4	16.4	0.3	6.05	7.73	27.28	685	0.49	6.82	clear	-83.4
1312	0.1	16.5	0.06	6.04	7.71	27.31	685	0.47	7.09	clear	-84.3
1314	0.1	16.6	0.06	6.04	7.71	27.29	685	0.45	6.30	clear	-84.9
1316	0.1	16.7	0.06	6.04	7.70	27.29	685	0.45	5.81	clear	-85.0

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016
 PURGING EQUIPMENT CODES: B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Andrew Galun (Geosyntec)	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1328	SAMPLING ENDED AT: 1330
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N)	FILTER SIZE: _____ μm
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (replaced)	DUPLICATE: Y (N)		

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per min)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
DEPMW-9(85-105')	2	HDPE	125 mL	ICE	-	-	PFAS	APP	250

REMARKS: **no odor**

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)
 SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 11. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
 2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
 pH: + 0.2 units Temperature: + 0.2 °C Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

**Form FD 9000-24
GROUNDWATER SAMPLING LOG**

SITE NAME: PDSC	SITE LOCATION: Lake Worth, FL
WELL NO: DEPMW-10(87-107)	SAMPLE ID: DEPMW-10(87-107) DATE: 3/4/20

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: 87 feet to 107 feet	STATIC DEPTH TO WATER (feet): 2.38	PURGE PUMP TYPE OR BAILER: PP							
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (107 feet - 2.38 feet) X 0.16 gallons/foot = 16.74 gallons											
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): S	FINAL PUMP OR TUBING DEPTH IN WELL (feet): S	PURGING INITIATED AT: 1450	PURGING ENDED AT: 1526	TOTAL VOLUME PURGED (gallons): 17.3							
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1520	17	17	0.5	3.43	7.73	26.72	539	0.73	5.37	clear	-101.5
1522	0.1	17.1	0.06	3.42	7.73	26.75	552	0.47	4.42	clear	-117.5
1524	0.1	17.2	0.06	3.42	7.71	26.69	557	0.39	3.57	clear	-120.0
1526	0.1	17.3	0.06	3.42	7.70	26.69	556	0.40	4.98	clear	-113.0
<p>WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88</p> <p>TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016</p> <p>PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)</p>											

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Andrew Galvan (Geosyntec)			SAMPLER(S) SIGNATURES: <i>[Signature]</i>			SAMPLING INITIATED AT: 1528	SAMPLING ENDED AT: 1530		
PUMP OR TUBING DEPTH IN WELL (feet):			TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y <input checked="" type="checkbox"/> (N)		FILTER SIZE: _____ μm			
FIELD DECONTAMINATION: PUMP Y <input checked="" type="checkbox"/> (N) TUBING Y <input checked="" type="checkbox"/> (N (replaced))			DUPLICATE: Y <input checked="" type="checkbox"/> (N)						
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per min)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
DEPMW-10(87-107)	2	HDPE	125L	ICE	-	-	DFAS	APP	250
REMARKS: no odor									
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)									
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)									

- NOTES:**
- The above do not constitute all of the information required by Chapter 62-160, F.A.C.
 - STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
 - pH: + 0.2 units Temperature: + 0.2 °C Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

**Form FD 9000-24
GROUNDWATER SAMPLING LOG**

SITE NAME: <u>PBSC</u>	SITE LOCATION: <u>Lake Worth, FL</u>
WELL NO: <u>DEPMW-11 (45-65')</u>	SAMPLE ID: <u>DEPMW-11 (45-65')</u> DATE: <u>3/4/20</u>

PURGING DATA

WELL DIAMETER (inches): <u>2</u>	TUBING DIAMETER (inches): <u>0.25</u>	WELL SCREEN INTERVAL DEPTH: <u>45</u> feet to <u>65</u> feet	STATIC DEPTH TO WATER (feet): <u>2.60</u>	PURGE PUMP TYPE OR BAILER: <u>PP</u>
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable)				
= (<u>65</u> feet - <u>2.6</u> feet) X <u>0.16</u> gallons/foot = <u>9.98</u> gallons				

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)				
= _____ gallons + (_____ gallons/foot X _____ feet) + _____ gallons = _____ gallons				

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): <u>6</u>	FINAL PUMP OR TUBING DEPTH IN WELL (feet): <u>6</u>	PURGING INITIATED AT: <u>1535</u>	PURGING ENDED AT: <u>1624</u>	TOTAL VOLUME PURGED (gallons): <u>30.3</u>
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TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
<u>1618</u>	<u>30</u>	<u>30</u>	<u>0.5</u>	<u>4.10</u>	<u>7.41</u>	<u>26.85</u>	<u>719</u>	<u>0.22</u>	<u>16.2</u>	<u>clear</u>	<u>-111.1</u>
<u>1620</u>	<u>0.1</u>	<u>30.1</u>	<u>0.06</u>	<u>4.10</u>	<u>7.40</u>	<u>26.85</u>	<u>718</u>	<u>0.22</u>	<u>16.4</u>	<u>clear</u>	<u>-110.1</u>
<u>1622</u>	<u>0.1</u>	<u>30.2</u>	<u>0.06</u>	<u>4.10</u>	<u>7.38</u>	<u>26.86</u>	<u>720</u>	<u>0.22</u>	<u>16.0</u>	<u>clear</u>	<u>-112.7</u>
<u>1624</u>	<u>0.1</u>	<u>30.3</u>	<u>0.06</u>	<u>4.10</u>	<u>7.38</u>	<u>26.84</u>	<u>720</u>	<u>0.22</u>	<u>15.2</u>	<u>clear</u>	<u>-113.4</u>

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016
PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: <u>Andrew Galvan (Geosyntec)</u>	SAMPLER(S) SIGNATURES: <u>[Signature]</u>	SAMPLING INITIATED AT: <u>1625</u>	SAMPLING ENDED AT: <u>1626</u>
PUMP OR TUBING DEPTH IN WELL (feet): <u>6</u>	TUBING MATERIAL CODE: <u>HDPE</u>	FIELD-FILTERED: Y <input checked="" type="radio"/> N <input type="radio"/>	FILTER SIZE: _____ μm
FIELD DECONTAMINATION: PUMP Y <input checked="" type="radio"/> N <input type="radio"/>	TUBING Y <input checked="" type="radio"/> N (replaced) <input type="radio"/>	DUPLICATE: Y <input type="radio"/> N <input checked="" type="radio"/>	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per min)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
<u>DEPMW-11(45-65')</u>	<u>2</u>	<u>HDPE</u>	<u>125mL</u>	<u>ICE</u>	<u>-</u>	<u>-</u>	<u>PFAS</u>	<u>APP</u>	<u>250</u>

REMARKS: no odor

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 11. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
12. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: + 0.2 units Temperature: + 0.2 °C Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

Form FD 9000-24
GROUNDWATER SAMPLING LOG

SITE NAME: PR3SC	SITE LOCATION: Lake Worth, FL
WELL NO: DEPMW-12 (45-65')	SAMPLE ID: DEPMW-12 (45-65') DATE: 3/4/20

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 2.5	WELL SCREEN INTERVAL DEPTH: 45 feet to 65 feet	STATIC DEPTH TO WATER (feet): 2.54	PURGE PUMP TYPE OR BAILER: PP
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = 65 feet - 2.54 feet X 0.16 gallons/foot = 10.0 gallons				

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable) = gallons + (gallons/foot X feet) + gallons = gallons				
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INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 5	PURGING INITIATED AT: 1015	PURGING ENDED AT: 1126	TOTAL VOLUME PURGED (gallons): 13.3
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TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1120	13	13	0.06	2.54	7.46	27.61	537	0.35	1.75	clear	-74.7
1122	0.1	13.1	0.06	2.54	7.45	27.56	537	0.35	1.82	clear	-79.4
1124	0.1	13.2	0.06	2.54	7.45	27.66	538	0.34	1.60	clear	-80.8
1126	0.1	13.3	0.06	2.54	7.44	27.72	538	0.34	1.58	clear	-82.1

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016
PURGING EQUIPMENT CODES: B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Andrew Golins (Geosyntec)	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1143	SAMPLING ENDED AT: 1145
PUMP OR TUBING DEPTH IN WELL (feet): 5	TUBING MATERIAL CODE: HOPE	FIELD-FILTERED: Y (N)	FILTER SIZE: μm
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N (replaced))	DUPLICATE: Y (N)		

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per min)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
DEPMW-12(45-65')	2	HOPE	125mL	JCC	-	-	PFAS	APP	250

REMARKS: **no odor, purged at ~ 0.5 GPM for first 30 minutes of purge**

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: **11. The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: + 0.2 units **Temperature:** + 0.2 °C **Specific Conductance:** + 5% **Dissolved Oxygen:** all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) **Turbidity:** all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

**Form FD 9000-24
GROUNDWATER SAMPLING LOG**

SITE NAME: <u>PBSC</u>	SITE LOCATION: <u>Lake Worth, FL</u>
WELL NO: <u>DEPMW-13(45-65')</u>	SAMPLE ID: <u>DEPMW-13(45-65') end,</u> DATE: <u>3/4/20</u>

PURGING DATA 9 DEPMW-13(45-65') DUP

WELL DIAMETER (inches): <u>2</u>	TUBING DIAMETER (inches): <u>0.25</u>	WELL SCREEN INTERVAL DEPTH: <u>45</u> feet to <u>65</u> feet	STATIC DEPTH TO WATER (feet): <u>4.21</u>	PURGE PUMP TYPE OR BAILER: <u>PP</u>
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = <u>65</u> feet - <u>4.21</u> feet X <u>0.16</u> gallons/foot = <u>9.73</u> gallons				
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill-out if applicable)				

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): <u>7</u>		FINAL PUMP OR TUBING DEPTH IN WELL (feet): <u>7</u>		PURGING INITIATED AT: <u>1340</u>	PURGING ENDED AT: <u>1416</u>	TOTAL VOLUME PURGED (gallons): <u>10.3</u>					
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
<u>1410</u>	<u>0</u>	<u>0</u>	<u>0.3</u>	<u>4.28</u>	<u>7.02</u>	<u>27.30</u>	<u>785</u>	<u>0.34</u>	<u>1.51</u>	<u>clear</u>	<u>-74.6</u>
<u>1412</u>	<u>0.1</u>	<u>0.1</u>	<u>0.06</u>	<u>4.28</u>	<u>7.03</u>	<u>27.29</u>	<u>788</u>	<u>0.33</u>	<u>1.49</u>	<u>clear</u>	<u>-76.2</u>
<u>1414</u>	<u>0.1</u>	<u>0.2</u>	<u>0.06</u>	<u>4.28</u>	<u>7.03</u>	<u>27.28</u>	<u>788</u>	<u>0.33</u>	<u>1.36</u>	<u>clear</u>	<u>-77.6</u>
<u>1416</u>	<u>0.1</u>	<u>0.3</u>	<u>0.06</u>	<u>4.28</u>	<u>7.04</u>	<u>27.28</u>	<u>785</u>	<u>0.33</u>	<u>1.30</u>	<u>clear</u>	<u>-78.3</u>

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016
PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: <u>Andrew Galvan (Geosyntec)</u>			SAMPLER(S) SIGNATURES: <u>[Signature]</u>			SAMPLING INITIATED AT: <u>1423</u>	SAMPLING ENDED AT: <u>1430</u>		
PUMP OR TUBING DEPTH IN WELL (feet): <u>7</u>			TUBING MATERIAL CODE: <u>HDPE</u>		FIELD-FILTERED: <u>Y</u> <input checked="" type="checkbox"/>	FILTER SIZE: _____ μm			
FIELD DECONTAMINATION: PUMP <u>Y</u> <input checked="" type="checkbox"/> TUBING <u>Y</u> <input checked="" type="checkbox"/> <u>(replaced)</u>			DUPLICATE: <u>Y</u> <input checked="" type="checkbox"/> <u>N</u> <input type="checkbox"/>						
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per min)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
<u>DEPMW-13(45-65')</u>	<u>2</u>	<u>HDPE</u>	<u>125 mL</u>	<u>ICE</u>	<u>-</u>	<u>-</u>	<u>PFAS</u>	<u>APP</u>	<u>250</u>
<u>DEPMW-13(45-65') DUP</u>	<u>2</u>	<u>HDPE</u>	<u>125 mL</u>	<u>ICE</u>	<u>-</u>	<u>-</u>	<u>PFAS</u>	<u>APP</u>	<u>250</u>

REMARKS: no odor

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPF = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 11. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
12. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: + 0.2 units Temperature: + 0.2 °C Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

FIELD DRUM INVENTORY TRACKING LOG

Project Name: **Palm Beach State College (PBSC)**

Drum Number	Generation Date	Content % Full	Contents (soil, development water, purge water, etc.)	Source Location (Well #, Boring #, etc.)		
1	2/5/2020	70	soil cuttings	DEPMW-8		
2	↓	60	↓	DEPMW-6		
3		60		DEPMW-8		
4		90		DEPMW-2		
5		90		DEPMW-7		
6		2/6/2020		80	DEPMW-6	
7	↓	90	↓	DEPMW-4		
8		70		DEPMW-3		
9		40		soil borings		
10		30		development water	DEPMW-6	
11		80		↓	DEPMW-3,4,8	
12		100			DEPMW-31	
13		100			DEPMW-1	
14		30			DEPMW-5	
15		70			DEPMW-7,2	

FIELD DRUM INVENTORY TRACKING LOG

Project No.: FB36308, Palm Beach State College

Project Start Date: 2/24/2020

Drum Number	Generation Date	Content % Full	Contents (soil, development water, purge water, etc.)	Source Location (Well #, Boring #, etc.)
17	2/24/2020	100	development water	DEPMW-9
18	2/24/2020	100	drill water/mud	DEPMW-9
19	2/24/2020	100	drill water/mud	DEPMW-9
20	2/25/2020	90	Soil	"
21	2/25/2020	60	Soil	DEPMW-10
22	"	100	drill water/mud	"
23	"	90	Soil	"
24	2/26/2020	100	Development water	DEPMW-11
25	2/28	90	Soil	"
26	2/26/2020	60	Soil	DEPMW-10
27	2/28/2020	90	Drill water/mud	DEPMW-11
28	2/27/2020	100	Drill water/mud	DEPMW-10
29	2/27/2020	100	Drill water/mud	"
30	2/27/2020	100	Drill water/mud	"
31	2/27/2020	100	Drill water/mud	"
32	"	"	"	"
33	2/29/2020	80	Soil	DEPMW-13
34	2/27/2020	100	Development water	DEPMW-9
35	2/28/2020	90	Soil	DEPMW-12
36	2/29/2020	100	Development water	DEPMW-12
37	2/29/2020	100	Development water	DEPMW-13
38				
39				

APPENDIX D
Laboratory Analytical Reports

Chemical Analysis Report

SIS-2019-08-16-02

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

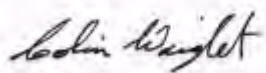
Event Description: **Palm Beach State College**
Request ID: **RQ-2019-07-15-39**
Customer: **SIS**
Project ID: **SIS-PFAS**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Road
Twin Towers Bldg. MS# 4515
Tallahassee, FL 32399
Attn: Jeff Newton

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 09-SEP-2019 11:59



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals, Pesticides and Priority Organic Pollutants.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 10:32

Field ID: SS-1(0-1')

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112528	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.10	U	ug/Kg	P369198	
		Perfluorodecanoic acid (PFDA)**	2.6		ug/Kg	P369198	
		Perfluorododecanoic acid (PFDoA)**	1.1		ug/Kg	P369198	
		Perfluoroheptanoic acid (PFHpA)**	1.7		ug/Kg	P369198	
		Perfluorohexanesulfonic acid (PFHxS)**	0.10	U	ug/Kg	P369198	
		Perfluorohexanoic acid (PFHxA)**	4.0		ug/Kg	P369198	
		Perfluorononanoic acid (PFNA)**	1.7		ug/Kg	P369198	
		Perfluorooctanesulfonic acid (PFOS)**	8.8		ug/Kg	P369198	
		Perfluorooctanoic acid (PFOA)**	3.0		ug/Kg	P369198	
		Perfluorotetradecanoic acid (PFTeA)**	0.31	I	ug/Kg	P369198	
		Perfluorotridecanoic acid (PFTriA)**	0.28	I	ug/Kg	P369198	
		Perfluoroundecanoic acid (PFUnA)**	0.93		ug/Kg	P369198	
		N-Me perfluorooctanesulfonamidoAc acid**	0.10	U	ug/Kg	P369198	
		N-Et perfluorooctanesulfonamidoAc acid**	0.10	U	ug/Kg	P369198	
		Perfluoropentanoic acid (PFPeA)**	4.8		ug/Kg	P369198	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.20	U	ug/Kg	P369198	
		Perfluoropentanesulfonic acid (PFPeS)**	0.10	U	ug/Kg	P369198	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	54		ug/Kg	P369198	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	160		ug/Kg	P369198	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.10	U	ug/Kg	P369198	
Perfluorononanesulfonic acid (PFNS)**	0.10	U	ug/Kg	P369198			
Perfluorodecanesulfonic acid (PFDS)**	0.10	U	ug/Kg	P369198			
2112548	SM 2540 G (20th)	% Solid**	93.7	A	%	P369706	

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 10:34

Field ID: SS-1(1-2')

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112529	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P369198	
		Perfluorodecanoic acid (PFDA)**	0.56		ug/Kg	P369198	
		Perfluorododecanoic acid (PFDoA)**	0.28	I	ug/Kg	P369198	
		Perfluoroheptanoic acid (PFHpA)**	2.7		ug/Kg	P369198	
		Perfluorohexanesulfonic acid (PFHxS)**	0.12	I	ug/Kg	P369198	
		Perfluorohexanoic acid (PFHxA)**	7.8		ug/Kg	P369198	
		Perfluorononanoic acid (PFNA)**	0.62		ug/Kg	P369198	
		Perfluorooctanesulfonic acid (PFOS)**	4.2		ug/Kg	P369198	
		Perfluorooctanoic acid (PFOA)**	3.7		ug/Kg	P369198	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P369198	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P369198	
		Perfluoroundecanoic acid (PFUnA)**	0.18	I	ug/Kg	P369198	
		N-Me perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P369198	
		N-Et perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P369198	
		Perfluoropentanoic acid (PFPeA)**	10		ug/Kg	P369198	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P369198	
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P369198	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	91		ug/Kg	P369198	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	31		ug/Kg	P369198	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P369198	
Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P369198			
Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P369198			
2112549	SM 2540 G (20th)	% Solid**	92.5		%	P369706	

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 09:40

Field ID: SS-2(0-1')

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112530	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.097	U	ug/Kg	P369198	
		Perfluorodecanoic acid (PFDA)**	1.8		ug/Kg	P369198	
		Perfluorododecanoic acid (PFDoA)**	2.1		ug/Kg	P369198	
		Perfluoroheptanoic acid (PFHpA)**	0.38	I	ug/Kg	P369198	
		Perfluorohexanesulfonic acid (PFHxS)**	0.097	U	ug/Kg	P369198	
		Perfluorohexanoic acid (PFHxA)**	1.2		ug/Kg	P369198	
		Perfluorononanoic acid (PFNA)**	0.32	I	ug/Kg	P369198	
		Perfluorooctanesulfonic acid (PFOS)**	0.89		ug/Kg	P369198	
		Perfluorooctanoic acid (PFOA)**	0.58		ug/Kg	P369198	
		Perfluorotetradecanoic acid (PFTeA)**	0.61		ug/Kg	P369198	
		Perfluorotridecanoic acid (PFTriA)**	0.58		ug/Kg	P369198	
		Perfluoroundecanoic acid (PFUnA)**	1.2		ug/Kg	P369198	
		N-Me perfluorooctanesulfonamidoAc acid**	0.097	U	ug/Kg	P369198	
		N-Et perfluorooctanesulfonamidoAc acid**	0.097	U	ug/Kg	P369198	
		Perfluoropentanoic acid (PFPeA)**	1.0		ug/Kg	P369198	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.19	U	ug/Kg	P369198	
		Perfluoropentanesulfonic acid (PFPeS)**	0.097	U	ug/Kg	P369198	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	13		ug/Kg	P369198	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	66		ug/Kg	P369198	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.097	U	ug/Kg	P369198	
		Perfluorononanesulfonic acid (PFNS)**	0.097	U	ug/Kg	P369198	
		Perfluorodecanesulfonic acid (PFDS)**	0.097	U	ug/Kg	P369198	
2112550	SM 2540 G (20th)	% Solid**	95.9		%	P369706	

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 09:45

Field ID: SS-2(1-2')

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112531	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P369198	
		Perfluorodecanoic acid (PFDA)**	1.4		ug/Kg	P369198	
		Perfluorododecanoic acid (PFDoA)**	0.11	U	ug/Kg	P369198	
		Perfluoroheptanoic acid (PFHpA)**	1.5		ug/Kg	P369198	
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P369198	
		Perfluorohexanoic acid (PFHxA)**	0.99		ug/Kg	P369198	
		Perfluorononanoic acid (PFNA)**	2.8		ug/Kg	P369198	
		Perfluorooctanesulfonic acid (PFOS)**	9.0		ug/Kg	P369198	
		Perfluorooctanoic acid (PFOA)**	3.1		ug/Kg	P369198	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P369198	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P369198	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P369198	
		N-Me perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P369198	
		N-Et perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P369198	
		Perfluoropentanoic acid (PFPeA)**	0.93		ug/Kg	P369198	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P369198	
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P369198	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	30		ug/Kg	P369198	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	190		ug/Kg	P369198	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P369198	
Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P369198			
Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P369198			
2112551	SM 2540 G (20th)	% Solid**	91.1		%	P369706	

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 10:04

Field ID: SS-3(0-1')

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112532	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.10	U	ug/Kg	P369198	
		Perfluorodecanoic acid (PFDA)**	4.2		ug/Kg	P369198	
		Perfluorododecanoic acid (PFDoA)**	0.99		ug/Kg	P369198	
		Perfluoroheptanoic acid (PFHpA)**	1.1		ug/Kg	P369198	
		Perfluorohexanesulfonic acid (PFHxS)**	0.10	U	ug/Kg	P369198	
		Perfluorohexanoic acid (PFHxA)**	6.3		ug/Kg	P369198	
		Perfluorononanoic acid (PFNA)**	1.5		ug/Kg	P369198	
		Perfluorooctanesulfonic acid (PFOS)**	2.9		ug/Kg	P369198	
		Perfluorooctanoic acid (PFOA)**	0.83		ug/Kg	P369198	
		Perfluorotetradecanoic acid (PFTeA)**	0.31	I	ug/Kg	P369198	
		Perfluorotridecanoic acid (PFTriA)**	0.20	I	ug/Kg	P369198	
		Perfluoroundecanoic acid (PFUnA)**	1.5		ug/Kg	P369198	
		N-Me perfluorooctanesulfonamidoAc acid**	0.10	U	ug/Kg	P369198	
		N-Et perfluorooctanesulfonamidoAc acid**	0.10	U	ug/Kg	P369198	
		Perfluoropentanoic acid (PFPeA)**	5.6		ug/Kg	P369198	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.21	U	ug/Kg	P369198	
		Perfluoropentanesulfonic acid (PFPeS)**	0.10	U	ug/Kg	P369198	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	67		ug/Kg	P369198	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	310		ug/Kg	P369198	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.10	U	ug/Kg	P369198	
		Perfluorononanesulfonic acid (PFNS)**	0.10	U	ug/Kg	P369198	
		Perfluorodecanesulfonic acid (PFDS)**	0.10	U	ug/Kg	P369198	
2112552	SM 2540 G (20th)	% Solid**	95.7		%	P369706	

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 10:02

Field ID: SS-3(1-2')

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112533	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.10	U	ug/Kg	P369198	
		Perfluorodecanoic acid (PFDA)**	0.16	I	ug/Kg	P369198	
		Perfluorododecanoic acid (PFDoA)**	0.10	U	ug/Kg	P369198	
		Perfluoroheptanoic acid (PFHpA)**	0.37	I	ug/Kg	P369198	
		Perfluorohexanesulfonic acid (PFHxS)**	0.10	U	ug/Kg	P369198	
		Perfluorohexanoic acid (PFHxA)**	1.4		ug/Kg	P369198	
		Perfluorononanoic acid (PFNA)**	1.2		ug/Kg	P369198	
		Perfluorooctanesulfonic acid (PFOS)**	4.2		ug/Kg	P369198	
		Perfluorooctanoic acid (PFOA)**	1.6		ug/Kg	P369198	
		Perfluorotetradecanoic acid (PFTeA)**	0.10	U	ug/Kg	P369198	
		Perfluorotridecanoic acid (PFTriA)**	0.10	U	ug/Kg	P369198	
		Perfluoroundecanoic acid (PFUnA)**	0.10	U	ug/Kg	P369198	
		N-Me perfluorooctanesulfonamidoAc acid**	0.10	U	ug/Kg	P369198	
		N-Et perfluorooctanesulfonamidoAc acid**	0.10	U	ug/Kg	P369198	
		Perfluoropentanoic acid (PFPeA)**	1.7		ug/Kg	P369198	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.20	U	ug/Kg	P369198	
		Perfluoropentanesulfonic acid (PFPeS)**	0.10	U	ug/Kg	P369198	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	150		ug/Kg	P369198	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	16		ug/Kg	P369198	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.10	U	ug/Kg	P369198	
Perfluorononanesulfonic acid (PFNS)**	0.10	U	ug/Kg	P369198			
Perfluorodecanesulfonic acid (PFDS)**	0.10	U	ug/Kg	P369198			
2112553	SM 2540 G (20th)	% Solid**	93.6		%	P369706	

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 10:53

Field ID: SS-4(0-1')

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112534	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P369198	
		Perfluorodecanoic acid (PFDA)**	0.11	U	ug/Kg	P369198	
		Perfluorododecanoic acid (PFDoA)**	0.11	U	ug/Kg	P369198	
		Perfluoroheptanoic acid (PFHpA)**	0.15	I	ug/Kg	P369198	
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P369198	
		Perfluorohexanoic acid (PFHxA)**	0.11	U	ug/Kg	P369198	
		Perfluorononanoic acid (PFNA)**	0.11	U	ug/Kg	P369198	
		Perfluorooctanesulfonic acid (PFOS)**	0.80	I	ug/Kg	P369198	
		Perfluorooctanoic acid (PFOA)**	0.20	I	ug/Kg	P369198	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P369198	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P369198	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P369198	
		N-Me perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P369198	
		N-Et perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P369198	
		Perfluoropentanoic acid (PFPeA)**	0.23	I	ug/Kg	P369198	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P369198	
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P369198	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.44	U	ug/Kg	P369198	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.22	U	ug/Kg	P369198	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P369198	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P369198	
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P369198	
2112554	SM 2540 G (20th)	% Solid**	92.3	A	%	P369707	

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 10:56

Field ID: SS-4(1-2')

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112535	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P369198	
		Perfluorodecanoic acid (PFDA)**	0.11	U	ug/Kg	P369198	
		Perfluorododecanoic acid (PFDoA)**	0.11	U	ug/Kg	P369198	
		Perfluoroheptanoic acid (PFHpA)**	0.18	I	ug/Kg	P369198	
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P369198	
		Perfluorohexanoic acid (PFHxA)**	0.37	I	ug/Kg	P369198	
		Perfluorononanoic acid (PFNA)**	0.11	U	ug/Kg	P369198	
		Perfluorooctanesulfonic acid (PFOS)**	0.50	I	ug/Kg	P369198	
		Perfluorooctanoic acid (PFOA)**	0.11	U	ug/Kg	P369198	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P369198	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P369198	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P369198	
		N-Me perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P369198	
		N-Et perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P369198	
		Perfluoropentanoic acid (PFPeA)**	0.53	I	ug/Kg	P369198	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.23	U	ug/Kg	P369198	
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P369198	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.45	U	ug/Kg	P369198	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.23	U	ug/Kg	P369198	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P369198	
Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P369198			
Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P369198			
2112555	SM 2540 G (20th)	% Solid**	91.2		%	P369707	

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 11:04

Field ID: SS-5(0-1')

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112536	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P369253	
		Perfluorodecanoic acid (PFDA)**	0.11	U	ug/Kg	P369253	
		Perfluorododecanoic acid (PFDoA)**	0.11	U	ug/Kg	P369253	
		Perfluoroheptanoic acid (PFHpA)**	0.18	I	ug/Kg	P369253	
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P369253	
		Perfluorohexanoic acid (PFHxA)**	0.17	I	ug/Kg	P369253	
		Perfluorononanoic acid (PFNA)**	0.11	U	ug/Kg	P369253	
		Perfluorooctanesulfonic acid (PFOS)**	0.90		ug/Kg	P369253	
		Perfluorooctanoic acid (PFOA)**	0.12	I	ug/Kg	P369253	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P369253	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P369253	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P369253	
		N-Me perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P369253	
		N-Et perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P369253	
		Perfluoropentanoic acid (PFPeA)**	0.39	I	ug/Kg	P369253	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P369253	
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P369253	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.44	U	ug/Kg	P369253	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.22	UJ	ug/Kg	P369253	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P369253	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P369253	
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P369253	
2112556	SM 2540 G (20th)	% Solid**	92.8		%	P369707	

Ref. Method and Comment:

EPA 8321B: Refer to the narrative for an explanation of QC Codes.

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 11:06

Field ID: SS-5(1-2')

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112537	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.14	U	ug/Kg	P369253	
		Perfluorodecanoic acid (PFDA)**	0.14	U	ug/Kg	P369253	
		Perfluorododecanoic acid (PFDoA)**	0.14	U	ug/Kg	P369253	
		Perfluoroheptanoic acid (PFHpA)**	0.14	U	ug/Kg	P369253	
		Perfluorohexanesulfonic acid (PFHxS)**	0.14	U	ug/Kg	P369253	
		Perfluorohexanoic acid (PFHxA)**	0.14	U	ug/Kg	P369253	
		Perfluorononanoic acid (PFNA)**	0.14	U	ug/Kg	P369253	
		Perfluorooctanesulfonic acid (PFOS)**	0.60	I	ug/Kg	P369253	
		Perfluorooctanoic acid (PFOA)**	0.14	U	ug/Kg	P369253	
		Perfluorotetradecanoic acid (PFTeA)**	0.14	U	ug/Kg	P369253	
		Perfluorotridecanoic acid (PFTriA)**	0.14	U	ug/Kg	P369253	
		Perfluoroundecanoic acid (PFUnA)**	0.14	U	ug/Kg	P369253	
		N-Me perfluorooctanesulfonamidoAc acid**	0.14	U	ug/Kg	P369253	
		N-Et perfluorooctanesulfonamidoAc acid**	0.14	U	ug/Kg	P369253	
		Perfluoropentanoic acid (PFPeA)**	0.27	U	ug/Kg	P369253	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.27	U	ug/Kg	P369253	
		Perfluoropentanesulfonic acid (PFPeS)**	0.14	U	ug/Kg	P369253	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.54	U	ug/Kg	P369253	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.27	U	ug/Kg	P369253	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.14	U	ug/Kg	P369253	
		Perfluorononanesulfonic acid (PFNS)**	0.14	U	ug/Kg	P369253	
		Perfluorodecanesulfonic acid (PFDS)**	0.14	U	ug/Kg	P369253	
2112557	SM 2540 G (20th)	% Solid**	77.9		%	P369707	

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 11:29

Field ID: SS-6(0-1')

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112538	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.10	U	ug/Kg	P369253	
		Perfluorodecanoic acid (PFDA)**	0.22	I	ug/Kg	P369253	
		Perfluorododecanoic acid (PFDoA)**	0.10	U	ug/Kg	P369253	
		Perfluoroheptanoic acid (PFHpA)**	0.10	U	ug/Kg	P369253	
		Perfluorohexanesulfonic acid (PFHxS)**	0.10	U	ug/Kg	P369253	
		Perfluorohexanoic acid (PFHxA)**	0.10	U	ug/Kg	P369253	
		Perfluorononanoic acid (PFNA)**	0.15	I	ug/Kg	P369253	
		Perfluorooctanesulfonic acid (PFOS)**	0.79	I	ug/Kg	P369253	
		Perfluorooctanoic acid (PFOA)**	0.10	U	ug/Kg	P369253	
		Perfluorotetradecanoic acid (PFTeA)**	0.10	U	ug/Kg	P369253	
		Perfluorotridecanoic acid (PFTriA)**	0.10	U	ug/Kg	P369253	
		Perfluoroundecanoic acid (PFUnA)**	0.15	I	ug/Kg	P369253	
		N-Me perfluorooctanesulfonamidoAc acid**	0.10	U	ug/Kg	P369253	
		N-Et perfluorooctanesulfonamidoAc acid**	0.10	U	ug/Kg	P369253	
		Perfluoropentanoic acid (PFPeA)**	0.20	U	ug/Kg	P369253	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.20	U	ug/Kg	P369253	
		Perfluoropentanesulfonic acid (PFPeS)**	0.10	U	ug/Kg	P369253	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.40	U	ug/Kg	P369253	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.20	U	ug/Kg	P369253	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.10	U	ug/Kg	P369253	
		Perfluorononanesulfonic acid (PFNS)**	0.10	U	ug/Kg	P369253	
		Perfluorodecanesulfonic acid (PFDS)**	0.10	U	ug/Kg	P369253	
2112558	SM 2540 G (20th)	% Solid**	94.5		%	P369707	

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 11:31

Field ID: SS-6(1-2')

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112539	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P369253	
		Perfluorodecanoic acid (PFDA)**	0.12	U	ug/Kg	P369253	
		Perfluorododecanoic acid (PFDoA)**	0.12	U	ug/Kg	P369253	
		Perfluoroheptanoic acid (PFHpA)**	0.12	U	ug/Kg	P369253	
		Perfluorohexanesulfonic acid (PFHxS)**	0.12	U	ug/Kg	P369253	
		Perfluorohexanoic acid (PFHxA)**	0.12	U	ug/Kg	P369253	
		Perfluorononanoic acid (PFNA)**	0.14	I	ug/Kg	P369253	
		Perfluorooctanesulfonic acid (PFOS)**	0.91	I	ug/Kg	P369253	
		Perfluorooctanoic acid (PFOA)**	0.12	U	ug/Kg	P369253	
		Perfluorotetradecanoic acid (PFTeA)**	0.12	U	ug/Kg	P369253	
		Perfluorotridecanoic acid (PFTriA)**	0.12	U	ug/Kg	P369253	
		Perfluoroundecanoic acid (PFUnA)**	0.12	U	ug/Kg	P369253	
		N-Me perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P369253	
		N-Et perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P369253	
		Perfluoropentanoic acid (PFPeA)**	0.24	U	ug/Kg	P369253	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.24	U	ug/Kg	P369253	
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	U	ug/Kg	P369253	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.48	U	ug/Kg	P369253	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.24	U	ug/Kg	P369253	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P369253	
		Perfluorononanesulfonic acid (PFNS)**	0.12	U	ug/Kg	P369253	
		Perfluorodecanesulfonic acid (PFDS)**	0.12	U	ug/Kg	P369253	
2112559	SM 2540 G (20th)	% Solid**	83.6		%	P369707	

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 12:44

Field ID: SS-7(0-1')

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112540	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P369253	
		Perfluorodecanoic acid (PFDA)**	0.31	I	ug/Kg	P369253	
		Perfluorododecanoic acid (PFDoA)**	0.17	I	ug/Kg	P369253	
		Perfluoroheptanoic acid (PFHpA)**	0.24	I	ug/Kg	P369253	
		Perfluorohexanesulfonic acid (PFHxS)**	0.22	I	ug/Kg	P369253	
		Perfluorohexanoic acid (PFHxA)**	0.18	I	ug/Kg	P369253	
		Perfluorononanoic acid (PFNA)**	0.66		ug/Kg	P369253	
		Perfluorooctanesulfonic acid (PFOS)**	15		ug/Kg	P369253	
		Perfluorooctanoic acid (PFOA)**	0.33	I	ug/Kg	P369253	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P369253	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P369253	
		Perfluoroundecanoic acid (PFUnA)**	0.23	I	ug/Kg	P369253	
		N-Me perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P369253	
		N-Et perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P369253	
		Perfluoropentanoic acid (PFPeA)**	0.39	I	ug/Kg	P369253	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.21	U	ug/Kg	P369253	
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P369253	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.42	U	ug/Kg	P369253	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.21	U	ug/Kg	P369253	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P369253	
Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P369253			
Perfluorodecanesulfonic acid (PFDS)**	0.41	I	ug/Kg	P369253			
2112560	SM 2540 G (20th)	% Solid**	92.6		%	P369707	

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 12:46

Field ID: SS-7(1-2')

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112541	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P369253	
		Perfluorodecanoic acid (PFDA)**	0.20	I	ug/Kg	P369253	
		Perfluorododecanoic acid (PFDoA)**	0.20	I	ug/Kg	P369253	
		Perfluoroheptanoic acid (PFHpA)**	0.60		ug/Kg	P369253	
		Perfluorohexanesulfonic acid (PFHxS)**	0.58		ug/Kg	P369253	
		Perfluorohexanoic acid (PFHxA)**	0.40	I	ug/Kg	P369253	
		Perfluorononanoic acid (PFNA)**	0.28	I	ug/Kg	P369253	
		Perfluorooctanesulfonic acid (PFOS)**	12		ug/Kg	P369253	
		Perfluorooctanoic acid (PFOA)**	0.95		ug/Kg	P369253	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P369253	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P369253	
		Perfluoroundecanoic acid (PFUnA)**	0.12	I	ug/Kg	P369253	
		N-Me perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P369253	
		N-Et perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P369253	
		Perfluoropentanoic acid (PFPeA)**	0.88	I	ug/Kg	P369253	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P369253	
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P369253	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.45	U	ug/Kg	P369253	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.22	U	ug/Kg	P369253	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.19	I	ug/Kg	P369253	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P369253	
		Perfluorodecanesulfonic acid (PFDS)**	0.18	I	ug/Kg	P369253	
2112561	SM 2540 G (20th)	% Solid**	88.4		%	P369707	

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 11:25

Field ID: TMW-1(4-14)

Matrix: W-GROUND

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112543	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	7.1		ng/L	P369257	
		Perfluorodecanoic acid (PFDA)**	25		ng/L	P369257	
		Perfluorododecanoic acid (PFDoA)**	0.94	U	ng/L	P369257	
		Perfluoroheptanoic acid (PFHpA)**	4.2E+03		ng/L	P369257	
		Perfluorohexanesulfonic acid (PFHxS)**	55		ng/L	P369257	
		Perfluorohexanoic acid (PFHxA)**	8.9E+03		ng/L	P369257	
		Perfluorononanoic acid (PFNA)**	530		ng/L	P369257	
		Perfluorooctanesulfonic acid (PFOS)**	490		ng/L	P369257	
		Perfluorooctanoic acid (PFOA)**	2.2E+03		ng/L	P369257	
		Perfluorotetradecanoic acid (PFTeA)**	0.38	U	ng/L	P369257	
		Perfluorotridecanoic acid (PFTriA)**	0.38	U	ng/L	P369257	
		Perfluoroundecanoic acid (PFUnA)**	0.94	U	ng/L	P369257	
		N-Me perfluorooctanesulfonamidoAc acid**	0.38	U	ng/L	P369257	
		N-Et perfluorooctanesulfonamidoAc acid**	0.38	U	ng/L	P369257	
		Perfluoropentanoic acid (PFPeA)**	1.2E+04		ng/L	P369257	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	3.5	I	ng/L	P369257	
		Perfluoropentanesulfonic acid (PFPeS)**	4.4		ng/L	P369257	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	3.1E+04		ng/L	P369257	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	400		ng/L	P369257	
		Perfluoroheptanesulfonic acid (PFHpS)**	5.0		ng/L	P369257	
		Perfluorononanesulfonic acid (PFNS)**	0.38	U	ng/L	P369257	
		Perfluorodecanesulfonic acid (PFDS)**	0.38	U	ng/L	P369257	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes.

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 11:25

Field ID: DUP-2

Matrix: W-GROUND

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112544	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	7.0		ng/L	P369257	
		Perfluorodecanoic acid (PFDA)**	26		ng/L	P369257	
		Perfluorododecanoic acid (PFDoA)**	0.95	U	ng/L	P369257	
		Perfluoroheptanoic acid (PFHpA)**	4.5E+03		ng/L	P369257	
		Perfluorohexanesulfonic acid (PFHxS)**	58		ng/L	P369257	
		Perfluorohexanoic acid (PFHxA)**	9.6E+03		ng/L	P369257	
		Perfluorononanoic acid (PFNA)**	510		ng/L	P369257	
		Perfluorooctanesulfonic acid (PFOS)**	490		ng/L	P369257	
		Perfluorooctanoic acid (PFOA)**	2.0E+03		ng/L	P369257	
		Perfluorotetradecanoic acid (PFTeA)**	0.38	U	ng/L	P369257	
		Perfluorotridecanoic acid (PFTriA)**	0.38	U	ng/L	P369257	
		Perfluoroundecanoic acid (PFUnA)**	0.95	U	ng/L	P369257	
		N-Me perfluorooctanesulfonamidoAc acid**	0.38	U	ng/L	P369257	
		N-Et perfluorooctanesulfonamidoAc acid**	0.38	U	ng/L	P369257	
		Perfluoropentanoic acid (PFPeA)**	1.2E+04		ng/L	P369257	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	3.6	I	ng/L	P369257	
		Perfluoropentanesulfonic acid (PFPeS)**	4.5		ng/L	P369257	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	2.8E+04		ng/L	P369257	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	360		ng/L	P369257	
		Perfluoroheptanesulfonic acid (PFHpS)**	5.0		ng/L	P369257	
		Perfluorononanesulfonic acid (PFNS)**	0.38	U	ng/L	P369257	
		Perfluorodecanesulfonic acid (PFDS)**	0.38	U	ng/L	P369257	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes.

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 10:00

Field ID: EQB-1

Matrix: W-EQPMT-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112545	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.37	U	ng/L	P369719	
		Perfluorodecanoic acid (PFDA)**	0.92	U	ng/L	P369719	
		Perfluorododecanoic acid (PFDoA)**	0.92	U	ng/L	P369719	
		Perfluoroheptanoic acid (PFHpA)**	0.37	U	ng/L	P369719	
		Perfluorohexanesulfonic acid (PFHxS)**	1.2	I	ng/L	P369719	
		Perfluorohexanoic acid (PFHxA)**	1.2	I	ng/L	P369719	
		Perfluorononanoic acid (PFNA)**	0.92	U	ng/L	P369719	
		Perfluorooctanesulfonic acid (PFOS)**	120		ng/L	P369719	
		Perfluorooctanoic acid (PFOA)**	0.92	U	ng/L	P369719	
		Perfluorotetradecanoic acid (PFTeA)**	0.37	U	ng/L	P369719	
		Perfluorotridecanoic acid (PFTriA)**	0.37	U	ng/L	P369719	
		Perfluoroundecanoic acid (PFUnA)**	0.92	U	ng/L	P369719	
		N-Me perfluorooctanesulfonamidoAc acid**	0.37	U	ng/L	P369719	
		N-Et perfluorooctanesulfonamidoAc acid**	0.37	U	ng/L	P369719	
		Perfluoropentanoic acid (PFPeA)**	0.92	U	ng/L	P369719	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	1.8	U	ng/L	P369719	
		Perfluoropentanesulfonic acid (PFPeS)**	0.37	U	ng/L	P369719	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	3.7	U	ng/L	P369719	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	1.8	U	ng/L	P369719	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.37	U	ng/L	P369719	
		Perfluorononanesulfonic acid (PFNS)**	0.76	I	ng/L	P369719	
		Perfluorodecanesulfonic acid (PFDS)**	0.37	U	ng/L	P369719	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes. Results confirmed in re-extraction.

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 10:20

Field ID: EQB-2

Matrix: W-EQPMT-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112546	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.37	U	ng/L	P369719	
		Perfluorodecanoic acid (PFDA)**	0.93	U	ng/L	P369719	
		Perfluorododecanoic acid (PFDoA)**	0.93	U	ng/L	P369719	
		Perfluoroheptanoic acid (PFHpA)**	0.37	U	ng/L	P369719	
		Perfluorohexanesulfonic acid (PFHxS)**	0.37	U	ng/L	P369719	
		Perfluorohexanoic acid (PFHxA)**	0.37	U	ng/L	P369719	
		Perfluorononanoic acid (PFNA)**	0.93	U	ng/L	P369719	
		Perfluorooctanesulfonic acid (PFOS)**	5.6	I	ng/L	P369719	
		Perfluorooctanoic acid (PFOA)**	0.93	U	ng/L	P369719	
		Perfluorotetradecanoic acid (PFTeA)**	0.37	U	ng/L	P369719	
		Perfluorotridecanoic acid (PFTriA)**	0.37	U	ng/L	P369719	
		Perfluoroundecanoic acid (PFUnA)**	0.93	U	ng/L	P369719	
		N-Me perfluorooctanesulfonamidoAc acid**	0.37	U	ng/L	P369719	
		N-Et perfluorooctanesulfonamidoAc acid**	0.37	U	ng/L	P369719	
		Perfluoropentanoic acid (PFPeA)**	0.93	U	ng/L	P369719	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	1.9	U	ng/L	P369719	
		Perfluoropentanesulfonic acid (PFPeS)**	0.37	U	ng/L	P369719	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	3.7	U	ng/L	P369719	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	1.9	U	ng/L	P369719	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.37	U	ng/L	P369719	
		Perfluorononanesulfonic acid (PFNS)**	0.37	U	ng/L	P369719	
		Perfluorodecanesulfonic acid (PFDS)**	0.37	U	ng/L	P369719	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes. Results confirmed in re-extraction.

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 12:05

Field ID: EQB-3

Matrix: W-EQPMT-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112547	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.37	U	ng/L	P369719	
		Perfluorodecanoic acid (PFDA)**	0.93	U	ng/L	P369719	
		Perfluorododecanoic acid (PFDoA)**	0.93	U	ng/L	P369719	
		Perfluoroheptanoic acid (PFHpA)**	0.37	U	ng/L	P369719	
		Perfluorohexanesulfonic acid (PFHxS)**	0.37	U	ng/L	P369719	
		Perfluorohexanoic acid (PFHxA)**	0.44	I	ng/L	P369719	
		Perfluorononanoic acid (PFNA)**	0.93	U	ng/L	P369719	
		Perfluorooctanesulfonic acid (PFOS)**	11		ng/L	P369719	
		Perfluorooctanoic acid (PFOA)**	0.93	U	ng/L	P369719	
		Perfluorotetradecanoic acid (PFTeA)**	0.37	U	ng/L	P369719	
		Perfluorotridecanoic acid (PFTriA)**	0.37	U	ng/L	P369719	
		Perfluoroundecanoic acid (PFUnA)**	0.93	U	ng/L	P369719	
		N-Me perfluorooctanesulfonamidoAc acid**	0.37	U	ng/L	P369719	
		N-Et perfluorooctanesulfonamidoAc acid**	0.37	U	ng/L	P369719	
		Perfluoropentanoic acid (PFPeA)**	0.93	U	ng/L	P369719	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	1.9	U	ng/L	P369719	
		Perfluoropentanesulfonic acid (PFPeS)**	0.37	U	ng/L	P369719	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	3.7	U	ng/L	P369719	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	1.9	U	ng/L	P369719	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.37	U	ng/L	P369719	
		Perfluorononanesulfonic acid (PFNS)**	0.37	U	ng/L	P369719	
		Perfluorodecanesulfonic acid (PFDS)**	0.37	U	ng/L	P369719	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes. Results confirmed in re-extraction.

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 11:00

Field ID: Chlorhexidine Gluconate

Matrix: WAS-LIQUID

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112542	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	1.5E+04	I	ug/Kg	P368342	
		Perfluorodecanoic acid (PFDA)**	25	U	ug/Kg	P368342	
		Perfluorododecanoic acid (PFDoA)**	25	U	ug/Kg	P368342	
		Perfluoroheptanoic acid (PFHpA)**	3.8E+03		ug/Kg	P368342	
		Perfluorohexanesulfonic acid (PFHxS)**	8.5E+04		ug/Kg	P368342	
		Perfluorohexanoic acid (PFHxA)**	9.7E+03		ug/Kg	P368342	
		Perfluorononanoic acid (PFNA)**	25	IJ	ug/Kg	P368342	MS
		Perfluorooctanesulfonic acid (PFOS)**	8.7E+05		ug/Kg	P368342	
		Perfluorooctanoic acid (PFOA)**	7.4E+03		ug/Kg	P368342	
		Perfluorotetradecanoic acid (PFTeA)**	25	UJ	ug/Kg	P368342	MS
		Perfluorotridecanoic acid (PFTriA)**	25	U	ug/Kg	P368342	
		Perfluoroundecanoic acid (PFUnA)**	25	U	ug/Kg	P368342	
		N-Me perfluorooctanesulfonamidoAc acid**	25	U	ug/Kg	P368342	
		N-Et perfluorooctanesulfonamidoAc acid**	25	U	ug/Kg	P368342	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample. Refer to the narrative for an explanation of QC Codes.

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 09:10

Field ID: SW-1

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112578	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.54	I	ng/L	P369257	
		Perfluorodecanoic acid (PFDA)**	7.0		ng/L	P369257	
		Perfluorododecanoic acid (PFDoA)**	2.2	I	ng/L	P369257	
		Perfluoroheptanoic acid (PFHpA)**	20		ng/L	P369257	
		Perfluorohexanesulfonic acid (PFHxS)**	2.5		ng/L	P369257	
		Perfluorohexanoic acid (PFHxA)**	80		ng/L	P369257	
		Perfluorononanoic acid (PFNA)**	5.6		ng/L	P369257	
		Perfluorooctanesulfonic acid (PFOS)**	9.0		ng/L	P369257	
		Perfluorooctanoic acid (PFOA)**	16		ng/L	P369257	
		Perfluorotetradecanoic acid (PFTeA)**	0.38	U	ng/L	P369257	
		Perfluorotridecanoic acid (PFTriA)**	0.49	I	ng/L	P369257	
		Perfluoroundecanoic acid (PFUnA)**	2.5	I	ng/L	P369257	
		N-Me perfluorooctanesulfonamidoAc acid**	0.38	U	ng/L	P369257	
		N-Et perfluorooctanesulfonamidoAc acid**	0.38	U	ng/L	P369257	
		Perfluoropentanoic acid (PFPeA)**	69		ng/L	P369257	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	1.9	U	ng/L	P369257	
		Perfluoropentanesulfonic acid (PFPeS)**	0.38	U	ng/L	P369257	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	570		ng/L	P369257	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	210		ng/L	P369257	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.38	U	ng/L	P369257	
		Perfluorononanesulfonic acid (PFNS)**	0.38	U	ng/L	P369257	
		Perfluorodecanesulfonic acid (PFDS)**	0.38	U	ng/L	P369257	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes.

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 09:10

Field ID: DUP-1

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112579	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.54	I	ng/L	P369257	
		Perfluorodecanoic acid (PFDA)**	6.2		ng/L	P369257	
		Perfluorododecanoic acid (PFDoA)**	2.8	I	ng/L	P369257	
		Perfluoroheptanoic acid (PFHpA)**	20		ng/L	P369257	
		Perfluorohexanesulfonic acid (PFHxS)**	2.4		ng/L	P369257	
		Perfluorohexanoic acid (PFHxA)**	71		ng/L	P369257	
		Perfluorononanoic acid (PFNA)**	5.2		ng/L	P369257	
		Perfluorooctanesulfonic acid (PFOS)**	8.9		ng/L	P369257	
		Perfluorooctanoic acid (PFOA)**	15		ng/L	P369257	
		Perfluorotetradecanoic acid (PFTeA)**	0.38	U	ng/L	P369257	
		Perfluorotridecanoic acid (PFTriA)**	0.43	I	ng/L	P369257	
		Perfluoroundecanoic acid (PFUnA)**	2.8	I	ng/L	P369257	
		N-Me perfluorooctanesulfonamidoAc acid**	0.38	U	ng/L	P369257	
		N-Et perfluorooctanesulfonamidoAc acid**	0.38	U	ng/L	P369257	
		Perfluoropentanoic acid (PFPeA)**	70		ng/L	P369257	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	1.9	U	ng/L	P369257	
		Perfluoropentanesulfonic acid (PFPeS)**	0.38	U	ng/L	P369257	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	540		ng/L	P369257	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	210		ng/L	P369257	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.38	U	ng/L	P369257	
		Perfluorononanesulfonic acid (PFNS)**	0.38	U	ng/L	P369257	
		Perfluorodecanesulfonic acid (PFDS)**	0.38	U	ng/L	P369257	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes.

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 12:57

Field ID: SW-2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112580	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	11		ng/L	P369257	
		Perfluorodecanoic acid (PFDA)**	0.95	U	ng/L	P369257	
		Perfluorododecanoic acid (PFDoA)**	0.95	U	ng/L	P369257	
		Perfluoroheptanoic acid (PFHpA)**	6.3		ng/L	P369257	
		Perfluorohexanesulfonic acid (PFHxS)**	7.3		ng/L	P369257	
		Perfluorohexanoic acid (PFHxA)**	20		ng/L	P369257	
		Perfluorononanoic acid (PFNA)**	1.5	I	ng/L	P369257	
		Perfluorooctanesulfonic acid (PFOS)**	46		ng/L	P369257	
		Perfluorooctanoic acid (PFOA)**	8.2		ng/L	P369257	
		Perfluorotetradecanoic acid (PFTeA)**	0.38	U	ng/L	P369257	
		Perfluorotridecanoic acid (PFTriA)**	0.38	U	ng/L	P369257	
		Perfluoroundecanoic acid (PFUnA)**	0.95	U	ng/L	P369257	
		N-Me perfluorooctanesulfonamidoAc acid**	0.38	U	ng/L	P369257	
		N-Et perfluorooctanesulfonamidoAc acid**	0.38	U	ng/L	P369257	
		Perfluoropentanoic acid (PFPeA)**	19		ng/L	P369257	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	1.9	U	ng/L	P369257	
		Perfluoropentanesulfonic acid (PFPeS)**	0.58	I	ng/L	P369257	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	500		ng/L	P369257	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	36		ng/L	P369257	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.54	I	ng/L	P369257	
		Perfluorononanesulfonic acid (PFNS)**	0.38	U	ng/L	P369257	
		Perfluorodecanesulfonic acid (PFDS)**	0.38	U	ng/L	P369257	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes.

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 13:17

Field ID: SED-1(0-1')

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112568	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.14	U	ug/Kg	P369253	
		Perfluorodecanoic acid (PFDA)**	0.14	U	ug/Kg	P369253	
		Perfluorododecanoic acid (PFDoA)**	0.54	I	ug/Kg	P369253	
		Perfluoroheptanoic acid (PFHpA)**	0.14	U	ug/Kg	P369253	
		Perfluorohexanesulfonic acid (PFHxS)**	0.14	U	ug/Kg	P369253	
		Perfluorohexanoic acid (PFHxA)**	0.14	U	ug/Kg	P369253	
		Perfluorononanoic acid (PFNA)**	0.14	U	ug/Kg	P369253	
		Perfluorooctanesulfonic acid (PFOS)**	0.44	I	ug/Kg	P369253	
		Perfluorooctanoic acid (PFOA)**	0.14	U	ug/Kg	P369253	
		Perfluorotetradecanoic acid (PFTeA)**	0.17	I	ug/Kg	P369253	
		Perfluorotridecanoic acid (PFTriA)**	0.22	I	ug/Kg	P369253	
		Perfluoroundecanoic acid (PFUnA)**	0.16	I	ug/Kg	P369253	
		N-Me perfluorooctanesulfonamidoAc acid**	0.14	U	ug/Kg	P369253	
		N-Et perfluorooctanesulfonamidoAc acid**	0.14	U	ug/Kg	P369253	
		Perfluoropentanoic acid (PFPeA)**	0.28	U	ug/Kg	P369253	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.28	U	ug/Kg	P369253	
		Perfluoropentanesulfonic acid (PFPeS)**	0.14	U	ug/Kg	P369253	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	1.6	I	ug/Kg	P369253	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.96	I	ug/Kg	P369253	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.14	U	ug/Kg	P369253	
		Perfluorononanesulfonic acid (PFNS)**	0.14	U	ug/Kg	P369253	
		Perfluorodecanesulfonic acid (PFDS)**	0.14	U	ug/Kg	P369253	
2112588	SM 2540 G (20th)	% Solid**	77.1		%	P369707	

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 12:55

Field ID: SED-2(0-1')

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112569	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.13	U	ug/Kg	P369253	
		Perfluorodecanoic acid (PFDA)**	0.13	U	ug/Kg	P369253	
		Perfluorododecanoic acid (PFDoA)**	0.13	U	ug/Kg	P369253	
		Perfluoroheptanoic acid (PFHpA)**	0.13	U	ug/Kg	P369253	
		Perfluorohexanesulfonic acid (PFHxS)**	0.13	U	ug/Kg	P369253	
		Perfluorohexanoic acid (PFHxA)**	0.13	U	ug/Kg	P369253	
		Perfluorononanoic acid (PFNA)**	0.13	U	ug/Kg	P369253	
		Perfluorooctanesulfonic acid (PFOS)**	1.2		ug/Kg	P369253	
		Perfluorooctanoic acid (PFOA)**	0.13	U	ug/Kg	P369253	
		Perfluorotetradecanoic acid (PFTeA)**	0.13	U	ug/Kg	P369253	
		Perfluorotridecanoic acid (PFTriA)**	0.13	U	ug/Kg	P369253	
		Perfluoroundecanoic acid (PFUnA)**	0.17	I	ug/Kg	P369253	
		N-Me perfluorooctanesulfonamidoAc acid**	0.13	U	ug/Kg	P369253	
		N-Et perfluorooctanesulfonamidoAc acid**	0.13	U	ug/Kg	P369253	
		Perfluoropentanoic acid (PFPeA)**	0.26	U	ug/Kg	P369253	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.26	U	ug/Kg	P369253	
		Perfluoropentanesulfonic acid (PFPeS)**	0.13	U	ug/Kg	P369253	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	3.1		ug/Kg	P369253	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	1.8		ug/Kg	P369253	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.13	U	ug/Kg	P369253	
		Perfluorononanesulfonic acid (PFNS)**	0.13	U	ug/Kg	P369253	
		Perfluorodecanesulfonic acid (PFDS)**	0.13	U	ug/Kg	P369253	
2112589	SM 2540 G (20th)	% Solid**	78.2		%	P369707	

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 13:55

Field ID: SED-3(0-1')

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112570	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.13	U	ug/Kg	P369253	
		Perfluorodecanoic acid (PFDA)**	0.48	I	ug/Kg	P369253	
		Perfluorododecanoic acid (PFDoA)**	0.61		ug/Kg	P369253	
		Perfluoroheptanoic acid (PFHpA)**	0.13	U	ug/Kg	P369253	
		Perfluorohexanesulfonic acid (PFHxS)**	0.61		ug/Kg	P369253	
		Perfluorohexanoic acid (PFHxA)**	0.49	I	ug/Kg	P369253	
		Perfluorononanoic acid (PFNA)**	0.13	U	ug/Kg	P369253	
		Perfluorooctanesulfonic acid (PFOS)**	15		ug/Kg	P369253	
		Perfluorooctanoic acid (PFOA)**	0.36	I	ug/Kg	P369253	
		Perfluorotetradecanoic acid (PFTeA)**	0.63		ug/Kg	P369253	
		Perfluorotridecanoic acid (PFTriA)**	0.44	I	ug/Kg	P369253	
		Perfluoroundecanoic acid (PFUnA)**	0.25	I	ug/Kg	P369253	
		N-Me perfluorooctanesulfonamidoAc acid**	0.13	U	ug/Kg	P369253	
		N-Et perfluorooctanesulfonamidoAc acid**	0.13	U	ug/Kg	P369253	
		Perfluoropentanoic acid (PFPeA)**	0.26	U	ug/Kg	P369253	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.26	U	ug/Kg	P369253	
		Perfluoropentanesulfonic acid (PFPeS)**	0.13	U	ug/Kg	P369253	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	15		ug/Kg	P369253	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	30		ug/Kg	P369253	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.13	U	ug/Kg	P369253	
Perfluorononanesulfonic acid (PFNS)**	0.13	U	ug/Kg	P369253			
Perfluorodecanesulfonic acid (PFDS)**	0.13	U	ug/Kg	P369253			
2112590	SM 2540 G (20th)	% Solid**	78.9	A	%	P369569	

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 13:31

Field ID: SED-4(0-1')

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112571	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P369253	
		Perfluorodecanoic acid (PFDA)**	0.12	U	ug/Kg	P369253	
		Perfluorododecanoic acid (PFDoA)**	0.34	I	ug/Kg	P369253	
		Perfluoroheptanoic acid (PFHpA)**	0.12	U	ug/Kg	P369253	
		Perfluorohexanesulfonic acid (PFHxS)**	0.12	U	ug/Kg	P369253	
		Perfluorohexanoic acid (PFHxA)**	0.12	U	ug/Kg	P369253	
		Perfluorononanoic acid (PFNA)**	0.12	U	ug/Kg	P369253	
		Perfluorooctanesulfonic acid (PFOS)**	0.29	I	ug/Kg	P369253	
		Perfluorooctanoic acid (PFOA)**	0.12	U	ug/Kg	P369253	
		Perfluorotetradecanoic acid (PFTeA)**	0.39	I	ug/Kg	P369253	
		Perfluorotridecanoic acid (PFTriA)**	0.30	I	ug/Kg	P369253	
		Perfluoroundecanoic acid (PFUnA)**	0.12	U	ug/Kg	P369253	
		N-Me perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P369253	
		N-Et perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P369253	
		Perfluoropentanoic acid (PFPeA)**	0.24	U	ug/Kg	P369253	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.24	U	ug/Kg	P369253	
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	U	ug/Kg	P369253	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	5.3		ug/Kg	P369253	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	2.8		ug/Kg	P369253	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P369253	
		Perfluorononanesulfonic acid (PFNS)**	0.12	U	ug/Kg	P369253	
		Perfluorodecanesulfonic acid (PFDS)**	0.12	U	ug/Kg	P369253	
2112591	SM 2540 G (20th)	% Solid**	85.3		%	P369569	

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 13:43

Field ID: SED-5(0-1')

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112572	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P369253	
		Perfluorodecanoic acid (PFDA)**	0.12	U	ug/Kg	P369253	
		Perfluorododecanoic acid (PFDoA)**	0.26	I	ug/Kg	P369253	
		Perfluoroheptanoic acid (PFHpA)**	0.12	U	ug/Kg	P369253	
		Perfluorohexanesulfonic acid (PFHxS)**	0.12	U	ug/Kg	P369253	
		Perfluorohexanoic acid (PFHxA)**	0.12	U	ug/Kg	P369253	
		Perfluorononanoic acid (PFNA)**	0.12	U	ug/Kg	P369253	
		Perfluorooctanesulfonic acid (PFOS)**	6.6		ug/Kg	P369253	
		Perfluorooctanoic acid (PFOA)**	0.12	U	ug/Kg	P369253	
		Perfluorotetradecanoic acid (PFTeA)**	0.39	I	ug/Kg	P369253	
		Perfluorotridecanoic acid (PFTriA)**	0.26	I	ug/Kg	P369253	
		Perfluoroundecanoic acid (PFUnA)**	0.12	U	ug/Kg	P369253	
		N-Me perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P369253	
		N-Et perfluorooctanesulfonamidoAc acid**	0.13	I	ug/Kg	P369253	
		Perfluoropentanoic acid (PFPeA)**	0.24	U	ug/Kg	P369253	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.24	U	ug/Kg	P369253	
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	U	ug/Kg	P369253	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	1.2	I	ug/Kg	P369253	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.98		ug/Kg	P369253	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P369253	
		Perfluorononanesulfonic acid (PFNS)**	0.12	U	ug/Kg	P369253	
		Perfluorodecanesulfonic acid (PFDS)**	0.12	U	ug/Kg	P369253	
2112592	SM 2540 G (20th)	% Solid**	84.8		%	P369569	

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 13:46

Field ID: SED-6(0-1')

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112573	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P369253	
		Perfluorodecanoic acid (PFDA)**	0.12	U	ug/Kg	P369253	
		Perfluorododecanoic acid (PFDoA)**	0.18	I	ug/Kg	P369253	
		Perfluoroheptanoic acid (PFHpA)**	0.12	U	ug/Kg	P369253	
		Perfluorohexanesulfonic acid (PFHxS)**	0.38	I	ug/Kg	P369253	
		Perfluorohexanoic acid (PFHxA)**	0.27	I	ug/Kg	P369253	
		Perfluorononanoic acid (PFNA)**	0.12	U	ug/Kg	P369253	
		Perfluorooctanesulfonic acid (PFOS)**	27		ug/Kg	P369253	
		Perfluorooctanoic acid (PFOA)**	0.12	U	ug/Kg	P369253	
		Perfluorotetradecanoic acid (PFTeA)**	0.18	I	ug/Kg	P369253	
		Perfluorotridecanoic acid (PFTriA)**	0.15	I	ug/Kg	P369253	
		Perfluoroundecanoic acid (PFUnA)**	0.12	U	ug/Kg	P369253	
		N-Me perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P369253	
		N-Et perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P369253	
		Perfluoropentanoic acid (PFPeA)**	0.25	U	ug/Kg	P369253	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.25	U	ug/Kg	P369253	
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	U	ug/Kg	P369253	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	6.5		ug/Kg	P369253	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	1.7		ug/Kg	P369253	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P369253	
		Perfluorononanesulfonic acid (PFNS)**	0.12	U	ug/Kg	P369253	
		Perfluorodecanesulfonic acid (PFDS)**	0.73		ug/Kg	P369253	
2112593	SM 2540 G (20th)	% Solid**	83.7		%	P369569	

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 13:20

Field ID: SED-7(0-1')

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112574	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P369253	
		Perfluorodecanoic acid (PFDA)**	0.12	U	ug/Kg	P369253	
		Perfluorododecanoic acid (PFDoA)**	0.12	U	ug/Kg	P369253	
		Perfluoroheptanoic acid (PFHpA)**	0.12	U	ug/Kg	P369253	
		Perfluorohexanesulfonic acid (PFHxS)**	0.12	U	ug/Kg	P369253	
		Perfluorohexanoic acid (PFHxA)**	0.12	U	ug/Kg	P369253	
		Perfluorononanoic acid (PFNA)**	0.12	U	ug/Kg	P369253	
		Perfluorooctanesulfonic acid (PFOS)**	0.24	U	ug/Kg	P369253	
		Perfluorooctanoic acid (PFOA)**	0.12	U	ug/Kg	P369253	
		Perfluorotetradecanoic acid (PFTeA)**	0.12	U	ug/Kg	P369253	
		Perfluorotridecanoic acid (PFTriA)**	0.12	U	ug/Kg	P369253	
		Perfluoroundecanoic acid (PFUnA)**	0.12	U	ug/Kg	P369253	
		N-Me perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P369253	
		N-Et perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P369253	
		Perfluoropentanoic acid (PFPeA)**	0.24	U	ug/Kg	P369253	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.24	U	ug/Kg	P369253	
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	U	ug/Kg	P369253	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.48	U	ug/Kg	P369253	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.24	U	ug/Kg	P369253	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P369253	
		Perfluorononanesulfonic acid (PFNS)**	0.12	U	ug/Kg	P369253	
		Perfluorodecanesulfonic acid (PFDS)**	0.12	U	ug/Kg	P369253	
2112594	SM 2540 G (20th)	% Solid**	83.7		%	P369569	

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 12:40

Field ID: TMW-2(4-14')

Matrix: W-GROUND

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112581	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	53		ng/L	P369257	
		Perfluorodecanoic acid (PFDA)**	9.6	U	ng/L	P369257	
		Perfluorododecanoic acid (PFDoA)**	0.96	U	ng/L	P369257	
		Perfluoroheptanoic acid (PFHpA)**	290		ng/L	P369257	
		Perfluorohexanesulfonic acid (PFHxS)**	1.6E+03		ng/L	P369257	
		Perfluorohexanoic acid (PFHxA)**	860		ng/L	P369257	
		Perfluorononanoic acid (PFNA)**	81		ng/L	P369257	
		Perfluorooctanesulfonic acid (PFOS)**	2.3E+04		ng/L	P369257	
		Perfluorooctanoic acid (PFOA)**	110		ng/L	P369257	
		Perfluorotetradecanoic acid (PFTeA)**	0.38	U	ng/L	P369257	
		Perfluorotridecanoic acid (PFTriA)**	0.38	U	ng/L	P369257	
		Perfluoroundecanoic acid (PFUnA)**	0.96	U	ng/L	P369257	
		N-Me perfluorooctanesulfonamidoAc acid**	3.8	U	ng/L	P369257	
		N-Et perfluorooctanesulfonamidoAc acid**	3.8	U	ng/L	P369257	
		Perfluoropentanoic acid (PFPeA)**	880		ng/L	P369257	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	29	I	ng/L	P369257	
		Perfluoropentanesulfonic acid (PFPeS)**	97		ng/L	P369257	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	1.9E+03		ng/L	P369257	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	920		ng/L	P369257	
		Perfluoroheptanesulfonic acid (PFHpS)**	63		ng/L	P369257	
		Perfluorononanesulfonic acid (PFNS)**	3.8	U	ng/L	P369257	
		Perfluorodecanesulfonic acid (PFDS)**	3.8	U	ng/L	P369257	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes. MDL for some parameters elevated due to matrix interference.

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 14:20

Field ID: FRB-1

Matrix: W-FRB

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112582	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.40	U	ng/L	P369257	
		Perfluorodecanoic acid (PFDA)**	1.0	U	ng/L	P369257	
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P369257	
		Perfluoroheptanoic acid (PFHpA)**	0.40	U	ng/L	P369257	
		Perfluorohexanesulfonic acid (PFHxS)**	0.40	U	ng/L	P369257	
		Perfluorohexanoic acid (PFHxA)**	0.40	U	ng/L	P369257	
		Perfluorononanoic acid (PFNA)**	1.0	U	ng/L	P369257	
		Perfluorooctanesulfonic acid (PFOS)**	2.0	U	ng/L	P369257	
		Perfluorooctanoic acid (PFOA)**	1.0	U	ng/L	P369257	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P369257	
		Perfluorotridecanoic acid (PFTriA)**	0.40	U	ng/L	P369257	
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P369257	
		N-Me perfluorooctanesulfonamidoAc acid**	0.40	U	ng/L	P369257	
		N-Et perfluorooctanesulfonamidoAc acid**	0.40	U	ng/L	P369257	
		Perfluoropentanoic acid (PFPeA)**	1.0	U	ng/L	P369257	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.0	U	ng/L	P369257	
		Perfluoropentanesulfonic acid (PFPeS)**	0.40	U	ng/L	P369257	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	4.0	U	ng/L	P369257	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	2.0	U	ng/L	P369257	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.40	U	ng/L	P369257	
		Perfluorononanesulfonic acid (PFNS)**	0.40	U	ng/L	P369257	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P369257	

Ref. Method and Comment:
 EPA 8321B: Insufficient sample to perform matrix spikes.

Sample Location: Palm Beach State College

Collection Date/Time: 08/14/2019 13:15

Field ID: IDW-1-WATER

Matrix: WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112575	EPA 8270D	Acenaphthene	0.053	U	ug/L	P368985	
		Acenaphthylene	0.053	U	ug/L	P368985	
		Acetophenone	0.42	U	ug/L	P368985	
		2-Acetylaminofluorene	2.1	U	ug/L	P368985	
		4-Aminobiphenyl	8.4	U	ug/L	P368985	MS
		Aniline	2.1	U	ug/L	P368985	
		Anthracene	0.11	U	ug/L	P368985	
		Azobenzene/1,2-Diphenylhydrazine**	0.11	U	ug/L	P368985	
		Benzidine	21	UJ	ug/L	P368985	CCV
		Benzo(a)anthracene	0.053	U	ug/L	P368985	
		Benzo(a)pyrene	0.053	U	ug/L	P368985	
		Benzo(b)fluoranthene	0.053	U	ug/L	P368985	
		Benzo(k)fluoranthene	0.053	U	ug/L	P368985	
		Benzo(g,h,i)perylene	0.053	U	ug/L	P368985	
		Benzyl alcohol	0.21	U	ug/L	P368985	
		Bis(2-chloroethoxy)methane	0.11	U	ug/L	P368985	
		Bis(2-chloroethyl)ether	0.11	U	ug/L	P368985	
		Bis(2-chloroisopropyl)ether	0.11	U	ug/L	P368985	
		Bis(2-ethylhexyl)phthalate	11	U	ug/L	P368985	
		Butyl benzyl phthalate	2.1	U	ug/L	P368985	
		4-Bromophenyl phenyl ether	0.11	U	ug/L	P368985	
		2-Chloronaphthalene	0.11	U	ug/L	P368985	
		4-Chlorophenyl phenyl ether	0.11	U	ug/L	P368985	
		Carbazole	0.11	U	ug/L	P368985	
		Chrysene	0.053	U	ug/L	P368985	
		m,p-Cresols	0.20	I	ug/L	P368985	
		o-Cresol	0.11	U	ug/L	P368985	
		Di-n-butyl phthalate	4.2	U	ug/L	P368985	
		Di-n-octyl phthalate	0.11	U	ug/L	P368985	
		Dibenzo(a,h)anthracene	0.053	U	ug/L	P368985	
		Dibenzofuran	0.11	U	ug/L	P368985	
		3,3'-Dichlorobenzidine	21	U	ug/L	P368985	MS
		Diethyl phthalate	4.2	U	ug/L	P368985	
		Dimethyl phthalate	0.11	U	ug/L	P368985	
		Dimethylaminoazobenzene	0.11	U	ug/L	P368985	
		7,12-Dimethylbenz(a)anthracene	0.21	U	ug/L	P368985	
		1,3-Dinitrobenzene	0.21	U	ug/L	P368985	
		2,4-Dinitrotoluene	0.11	U	ug/L	P368985	
		2,6-Dinitrotoluene	0.11	U	ug/L	P368985	
		Dinoseb**	8.4	U	ug/L	P368985	
		Ethyl methanesulfonate	2.1	U	ug/L	P368985	
		Fluoranthene	0.11	U	ug/L	P368985	
		Fluorene	0.053	U	ug/L	P368985	
		Hexachlorobenzene	0.11	U	ug/L	P368985	

Field ID: IDW-1-WATER

Matrix: WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112575	EPA 8270D	Hexachlorobutadiene	0.11	U	ug/L	P368985	
		Hexachlorocyclopentadiene	0.11	U	ug/L	P368985	MS
		Hexachloroethane	0.11	U	ug/L	P368985	
		Hexachloropropene	0.11	U	ug/L	P368985	MS
		Indeno(1,2,3-cd)pyrene	0.053	U	ug/L	P368985	
		Isophorone	0.11	U	ug/L	P368985	
		Isosafrole	0.11	U	ug/L	P368985	
		3-Methylcholanthrene	0.21	U	ug/L	P368985	
		2-Methylnaphthalene	0.21	U	ug/L	P368985	
		Naphthalene	0.36	I	ug/L	P368985	
		1-Naphthylamine	21	U	ug/L	P368985	MS
		2-Naphthylamine	21	U	ug/L	P368985	MS
		2-Nitroaniline	0.11	U	ug/L	P368985	
		Nitrobenzene	0.11	U	ug/L	P368985	
		5-Nitro-o-toluidine	0.21	U	ug/L	P368985	
		N-Nitrosodi-n-butylamine	0.11	U	ug/L	P368985	
		N-Nitrosodiethylamine	2.1	U	ug/L	P368985	
		N-Nitrosodimethylamine	4.2	U	ug/L	P368985	
		N-Nitrosodi-n-propylamine	0.11	U	ug/L	P368985	
		N-Nitrosomethylethylamine	4.2	U	ug/L	P368985	
		N-Nitrosomorpholine	0.11	U	ug/L	P368985	
		N-Nitrosopiperidine	0.11	U	ug/L	P368985	
		N-Nitrosopyrrolidine	0.11	U	ug/L	P368985	MS
		Pentachlorobenzene	0.11	U	ug/L	P368985	
		Pentachloroethane**	0.11	U	ug/L	P368985	
		Pentachloronitrobenzene	0.11	U	ug/L	P368985	
		Phenacetin	0.21	U	ug/L	P368985	
		Phenanthrene	0.21	U	ug/L	P368985	
		2-Picoline	2.1	U	ug/L	P368985	
		Pyrene	0.21	U	ug/L	P368985	
		Pyridine	8.4	U	ug/L	P368985	
		Safrole	0.11	U	ug/L	P368985	
		1,2,4,5-Tetrachlorobenzene	0.11	U	ug/L	P368985	
		o-Toluidine	0.21	U	ug/L	P368985	
		1,2,4-Trichlorobenzene	0.11	U	ug/L	P368985	
		1,3,5-Trinitrobenzene	0.21	U	ug/L	P368985	MS
		4-Chloro-3-methylphenol	0.11	U	ug/L	P368985	
		2-Chlorophenol	0.11	U	ug/L	P368985	
		2,4-Dichlorophenol	0.11	U	ug/L	P368985	
		2,6-Dichlorophenol	0.11	U	ug/L	P368985	
		2,4-Dimethylphenol	0.13	I	ug/L	P368985	
		2,4-Dinitrophenol	21	U	ug/L	P368985	
		2-Methyl-4,6-dinitrophenol	6.3	U	ug/L	P368985	
		2-Nitrophenol	0.11	U	ug/L	P368985	
		4-Nitrophenol	21	U	ug/L	P368985	

Field ID: IDW-1-WATER

Matrix: WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes		
2112575	EPA 8270D	Pentachlorophenol	1.1	U	ug/L	P368985			
		Phenol	0.11	U	ug/L	P368985			
		2,3,4,6-Tetrachlorophenol	0.21	U	ug/L	P368985			
		2,4,5-Trichlorophenol	0.11	U	ug/L	P368985			
		2,4,6-Trichlorophenol	0.11	U	ug/L	P368985			
		1-Methylnaphthalene	0.21	U	ug/L	P368985			
		N-Nitrosodiphenylamine/ Diphenylamine	0.21	U	ug/L	P368985			
		2112576	EPA 7473	Mercury**	0.11	I	ug/L	P369289	
		2112577	EPA 6020A	Arsenic	3.65		ug/L	P369358	
Barium	42.0				ug/L	P369358			
Cadmium	0.037			I	ug/L	P369358			
Chromium	45.9				ug/L	P369358			
Lead	16.0				ug/L	P369358			
Selenium	0.75			I	ug/L	P369358			
Silver	0.010			U	ug/L	P369358			
2112583	EPA 8321B			Perfluorobutanesulfonic acid (PFBS)**	41		ng/L	P369257	
				Perfluorodecanoic acid (PFDA)**	95	U	ng/L	P369257	
		Perfluorododecanoic acid (PFDoA)**	95	U	ng/L	P369257			
		Perfluoroheptanoic acid (PFHpA)**	1.2E+03		ng/L	P369257			
		Perfluorohexanesulfonic acid (PFHxS)**	1.3E+03		ng/L	P369257			
		Perfluorohexanoic acid (PFHxA)**	2.4E+03		ng/L	P369257			
		Perfluorononanoic acid (PFNA)**	170		ng/L	P369257			
		Perfluorooctanesulfonic acid (PFOS)**	1.4E+04		ng/L	P369257			
		Perfluorooctanoic acid (PFOA)**	730		ng/L	P369257			
		Perfluorotetradecanoic acid (PFTeA)**	38	U	ng/L	P369257			
		Perfluorotridecanoic acid (PFTriA)**	38	U	ng/L	P369257			
		Perfluoroundecanoic acid (PFUnA)**	95	U	ng/L	P369257			
		N-Me perfluorooctanesulfonamidoAc acid**	3.8	U	ng/L	P369257			
		N-Et perfluorooctanesulfonamidoAc acid**	3.8	U	ng/L	P369257			
		Perfluoropentanoic acid (PFPeA)**	2.8E+03		ng/L	P369257			
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	21	I	ng/L	P369257			
		Perfluoropentanesulfonic acid (PFPeS)**	74		ng/L	P369257			
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	1.0E+04		ng/L	P369257			
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	1.5E+03		ng/L	P369257			
		Perfluoroheptanesulfonic acid (PFHpS)**	49		ng/L	P369257			
		Perfluorononanesulfonic acid (PFNS)**	3.8	U	ng/L	P369257			
		Perfluorodecanesulfonic acid (PFDS)**	3.8	U	ng/L	P369257			
		2112584	EPA 8260D	Benzene	20	U	ug/L	P369571	
Bromodichloromethane	20			U	ug/L	P369571			
Bromoform	50			U	ug/L	P369571			
Bromomethane	50			U	ug/L	P369571			
2-Butanone	300			U	ug/L	P369571			

Field ID: IDW-1-WATER

Matrix: WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2112584	EPA 8260D	Carbon tetrachloride	20	U	ug/L	P369571	
		Chlorobenzene	20	U	ug/L	P369571	
		Chloroethane	50	U	ug/L	P369571	
		Chloroform	20	U	ug/L	P369571	
		Chloromethane	50	U	ug/L	P369571	
		Dibromochloromethane	20	U	ug/L	P369571	
		1,2-Dichlorobenzene	50	U	ug/L	P369571	
		1,3-Dichlorobenzene	50	U	ug/L	P369571	
		1,4-Dichlorobenzene	50	U	ug/L	P369571	
		1,1-Dichloroethane	20	U	ug/L	P369571	
		1,2-Dichloroethane	20	U	ug/L	P369571	
		1,1-Dichloroethene	20	U	ug/L	P369571	
		cis-1,2-Dichloroethene	20	U	ug/L	P369571	
		trans-1,2-Dichloroethene	20	U	ug/L	P369571	
		1,2-Dichloropropane	20	U	ug/L	P369571	
		cis-1,3-Dichloropropene	50	U	ug/L	P369571	
		trans-1,3-Dichloropropene	50	U	ug/L	P369571	
		Ethylbenzene	20	U	ug/L	P369571	
		Methyl-t-butyl ether	20	U	ug/L	P369571	
		Methylene chloride	100	U	ug/L	P369571	
		1,1,2,2-Tetrachloroethane	20	U	ug/L	P369571	
		Tetrachloroethene	20	U	ug/L	P369571	
		Toluene	50	U	ug/L	P369571	
		1,1,1-Trichloroethane	20	U	ug/L	P369571	
		1,1,2-Trichloroethane	20	U	ug/L	P369571	
		Trichloroethene	20	U	ug/L	P369571	
		Trichlorofluoromethane	20	U	ug/L	P369571	
		Vinyl chloride	20	U	ug/L	P369571	
		o-Xylene	50	U	ug/L	P369571	
		m,p-Xylene	50	U	ug/L	P369571	

Ref. Method and Comment:

EPA 8270D: Matrix spike precision for some analytes is not available due to low analyte recoveries. MDLs are elevated due to matrix interference. Refer to the narrative for an explanation of QC Codes.

EPA 8321B: Insufficient sample to perform matrix spikes. MDL for some parameters elevated due to matrix interference.

EPA 8260D: The MDLs are elevated due to sample dilution as a result of excessive foaming.

Quality Assurance Report Method Blank Results

Reference Method: EPA 6020A
Batch ID: P369358

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	2.0	U	ug/L
Lead	0.20	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 7473
Batch ID: P369289

Component	Result	Code	Units
Mercury	0.10	U	ug/L

Reference Method: EPA 8260D
Batch ID: P369571

Component	Result	Code	Units
1,1-Dichloroethane	0.20	U	ug/L
1,1-Dichloroethene	0.20	U	ug/L
1,1,1-Trichloroethane	0.20	U	ug/L
1,1,2-Trichloroethane	0.20	U	ug/L
1,1,2,2-Tetrachloroethane	0.20	U	ug/L
1,2-Dichlorobenzene	0.50	U	ug/L
1,2-Dichloroethane	0.20	U	ug/L
1,2-Dichloropropane	0.20	U	ug/L
1,3-Dichlorobenzene	0.50	U	ug/L
1,4-Dichlorobenzene	0.50	U	ug/L
2-Butanone	3.0	U	ug/L
Benzene	0.20	U	ug/L
Bromodichloromethane	0.20	U	ug/L
Bromoform	0.50	U	ug/L
Bromomethane	0.50	U	ug/L
Carbon tetrachloride	0.20	U	ug/L
Chlorobenzene	0.20	U	ug/L
Chloroethane	0.50	U	ug/L
Chloroform	0.20	U	ug/L
Chloromethane	0.50	U	ug/L
cis-1,2-Dichloroethene	0.20	U	ug/L
cis-1,3-Dichloropropene	0.50	U	ug/L
Dibromochloromethane	0.20	U	ug/L
Ethylbenzene	0.20	U	ug/L
m,p-Xylene	0.50	U	ug/L
Methyl-t-butyl ether	0.20	U	ug/L
Methylene chloride	1.0	U	ug/L
o-Xylene	0.50	U	ug/L
Tetrachloroethene	0.20	U	ug/L
Toluene	0.50	U	ug/L
trans-1,2-Dichloroethene	0.20	U	ug/L
trans-1,3-Dichloropropene	0.50	U	ug/L
Trichloroethene	0.20	U	ug/L
Trichlorofluoromethane	0.20	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8260D
Batch ID: P369571

Component	Result	Code	Units
Vinyl chloride	0.20	U	ug/L

Reference Method: EPA 8270D
Batch ID: P368985

Component	Result	Code	Units
1-Methylnaphthalene	0.10	U	ug/L
1-Naphthylamine	10	U	ug/L
1,2,4-Trichlorobenzene	0.050	U	ug/L
1,2,4,5-Tetrachlorobenzene	0.050	U	ug/L
1,3-Dinitrobenzene	0.10	U	ug/L
1,3,5-Trinitrobenzene	0.10	U	ug/L
2-Acetylaminofluorene	1.0	U	ug/L
2-Chloronaphthalene	0.050	U	ug/L
2-Chlorophenol	0.050	U	ug/L
2-Methyl-4,6-dinitrophenol	3.0	U	ug/L
2-Methylnaphthalene	0.10	U	ug/L
2-Naphthylamine	10	U	ug/L
2-Nitroaniline	0.050	U	ug/L
2-Nitrophenol	0.050	U	ug/L
2-Picoline	1.0	U	ug/L
2,3,4,6-Tetrachlorophenol	0.10	U	ug/L
2,4-Dichlorophenol	0.050	U	ug/L
2,4-Dimethylphenol	0.050	U	ug/L
2,4-Dinitrophenol	10	U	ug/L
2,4-Dinitrotoluene	0.050	U	ug/L
2,4,5-Trichlorophenol	0.050	U	ug/L
2,4,6-Trichlorophenol	0.050	U	ug/L
2,6-Dichlorophenol	0.050	U	ug/L
2,6-Dinitrotoluene	0.050	U	ug/L
3-Methylcholanthrene	0.10	U	ug/L
3,3'-Dichlorobenzidine	10	U	ug/L
4-Aminobiphenyl	4.0	U	ug/L
4-Bromophenyl phenyl ether	0.050	U	ug/L
4-Chloro-3-methylphenol	0.050	U	ug/L
4-Chlorophenyl phenyl ether	0.050	U	ug/L
4-Nitrophenol	10	U	ug/L
5-Nitro-o-toluidine	0.10	U	ug/L
7,12-Dimethylbenz(a)anthracene	0.10	U	ug/L
Acenaphthene	0.025	U	ug/L
Acenaphthylene	0.025	U	ug/L
Acetophenone	0.20	U	ug/L
Aniline	1.0	U	ug/L
Anthracene	0.050	U	ug/L
Azobenzene/1,2-Diphenylhydrazine	0.050	U	ug/L
Benzidine	10	U	ug/L
Benzo(a)anthracene	0.025	U	ug/L
Benzo(a)pyrene	0.025	U	ug/L
Benzo(b)fluoranthene	0.025	U	ug/L
Benzo(g,h,i)perylene	0.025	U	ug/L
Benzo(k)fluoranthene	0.025	U	ug/L
Benzyl alcohol	0.10	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270D
Batch ID: P368985

Component	Result	Code	Units
Bis(2-chloroethoxy)methane	0.050	U	ug/L
Bis(2-chloroethyl)ether	0.050	U	ug/L
Bis(2-chloroisopropyl)ether	0.050	U	ug/L
Bis(2-ethylhexyl)phthalate	5.0	U	ug/L
Butyl benzyl phthalate	1.0	U	ug/L
Carbazole	0.050	U	ug/L
Chrysene	0.025	U	ug/L
Di-n-butyl phthalate	2.0	U	ug/L
Di-n-octyl phthalate	0.050	U	ug/L
Dibenzo(a,h)anthracene	0.025	U	ug/L
Dibenzofuran	0.050	U	ug/L
Diethyl phthalate	2.0	U	ug/L
Dimethyl phthalate	0.050	U	ug/L
Dimethylaminoazobenzene	0.050	U	ug/L
Dinoseb	4.0	U	ug/L
Ethyl methanesulfonate	1.0	U	ug/L
Fluoranthene	0.050	U	ug/L
Fluorene	0.025	U	ug/L
Hexachlorobenzene	0.050	U	ug/L
Hexachlorobutadiene	0.050	U	ug/L
Hexachlorocyclopentadiene	0.050	U	ug/L
Hexachloroethane	0.050	U	ug/L
Hexachloropropene	0.050	U	ug/L
Indeno(1,2,3-cd)pyrene	0.025	U	ug/L
Isophorone	0.050	U	ug/L
Isosafrole	0.050	U	ug/L
m,p-Cresols	0.050	U	ug/L
N-Nitrosodi-n-butylamine	0.050	U	ug/L
N-Nitrosodi-n-propylamine	0.050	U	ug/L
N-Nitrosodiethylamine	1.0	U	ug/L
N-Nitrosodimethylamine	2.0	U	ug/L
N-Nitrosodiphenylamine/ Diphenylamine	0.10	U	ug/L
N-Nitrosomethylethylamine	2.0	U	ug/L
N-Nitrosomorpholine	0.050	U	ug/L
N-Nitrosopiperidine	0.050	U	ug/L
N-Nitrosopyrrolidine	0.050	U	ug/L
Naphthalene	0.10	U	ug/L
Nitrobenzene	0.050	U	ug/L
o-Cresol	0.050	U	ug/L
o-Toluidine	0.10	U	ug/L
Pentachlorobenzene	0.050	U	ug/L
Pentachloroethane	0.050	U	ug/L
Pentachloronitrobenzene	0.050	U	ug/L
Pentachlorophenol	0.50	U	ug/L
Phenacetin	0.10	U	ug/L
Phenanthrene	0.10	U	ug/L
Phenol	0.050	U	ug/L
Pyrene	0.10	U	ug/L
Pyridine	4.0	U	ug/L
Safrole	0.050	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P368342

Component	Result	Code	Units
N-Et perfluorooctanesulfonamidoAc acid	25	U	ug/Kg
N-Me perfluorooctanesulfonamidoAc acid	25	U	ug/Kg
Perfluorobutanesulfonic acid (PFBS)	25	U	ug/Kg
Perfluorodecanoic acid (PFDA)	25	U	ug/Kg
Perfluorododecanoic acid (PFDoA)	25	U	ug/Kg
Perfluoroheptanoic acid (PFHpA)	25	U	ug/Kg
Perfluorohexanesulfonic acid (PFHxS)	25	U	ug/Kg
Perfluorohexanoic acid (PFHxA)	25	U	ug/Kg
Perfluorononanoic acid (PFNA)	25	U	ug/Kg
Perfluorooctanesulfonic acid (PFOS)	50	U	ug/Kg
Perfluorooctanoic acid (PFOA)	25	U	ug/Kg
Perfluorotetradecanoic acid (PFTeA)	25	U	ug/Kg
Perfluorotridecanoic acid (PFTriA)	25	U	ug/Kg
Perfluoroundecanoic acid (PFUnA)	25	U	ug/Kg

Reference Method: EPA 8321B
Batch ID: P369198

Component	Result	Code	Units
4:2 Fluorotelomer sulfonate (4:2 FTS)	0.20	U	ug/Kg
6:2 Fluorotelomer sulfonate (6:2 FTS)	0.40	U	ug/Kg
8:2 Fluorotelomer sulfonate (8:2 FTS)	0.20	U	ug/Kg
N-Et perfluorooctanesulfonamidoAc acid	0.10	U	ug/Kg
N-Me perfluorooctanesulfonamidoAc acid	0.10	U	ug/Kg
Perfluorobutanesulfonic acid (PFBS)	0.10	U	ug/Kg
Perfluorodecanesulfonic acid (PFDS)	0.10	U	ug/Kg
Perfluorodecanoic acid (PFDA)	0.10	U	ug/Kg
Perfluorododecanoic acid (PFDoA)	0.10	U	ug/Kg
Perfluoroheptanesulfonic acid (PFHpS)	0.10	U	ug/Kg
Perfluoroheptanoic acid (PFHpA)	0.10	U	ug/Kg
Perfluorohexanesulfonic acid (PFHxS)	0.10	U	ug/Kg
Perfluorohexanoic acid (PFHxA)	0.10	U	ug/Kg
Perfluorononanesulfonic acid (PFNS)	0.10	U	ug/Kg
Perfluorononanoic acid (PFNA)	0.10	U	ug/Kg
Perfluorooctanesulfonic acid (PFOS)	0.20	U	ug/Kg
Perfluorooctanoic acid (PFOA)	0.10	U	ug/Kg
Perfluoropentanesulfonic acid (PFPeS)	0.10	U	ug/Kg
Perfluoropentanoic acid (PFPeA)	0.20	U	ug/Kg
Perfluorotetradecanoic acid (PFTeA)	0.10	U	ug/Kg
Perfluorotridecanoic acid (PFTriA)	0.10	U	ug/Kg
Perfluoroundecanoic acid (PFUnA)	0.10	U	ug/Kg

Reference Method: EPA 8321B
Batch ID: P369253

Component	Result	Code	Units
4:2 Fluorotelomer sulfonate (4:2 FTS)	0.20	U	ug/Kg
6:2 Fluorotelomer sulfonate (6:2 FTS)	0.40	U	ug/Kg
8:2 Fluorotelomer sulfonate (8:2 FTS)	0.20	U	ug/Kg
N-Et perfluorooctanesulfonamidoAc acid	0.10	U	ug/Kg
N-Me perfluorooctanesulfonamidoAc acid	0.10	U	ug/Kg
Perfluorobutanesulfonic acid (PFBS)	0.10	U	ug/Kg

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P369253

Component	Result	Code	Units
Perfluorodecanesulfonic acid (PFDS)	0.10	U	ug/Kg
Perfluorodecanoic acid (PFDA)	0.10	U	ug/Kg
Perfluorododecanoic acid (PFDoA)	0.10	U	ug/Kg
Perfluoroheptanesulfonic acid (PFHpS)	0.10	U	ug/Kg
Perfluoroheptanoic acid (PFHpA)	0.10	U	ug/Kg
Perfluorohexanesulfonic acid (PFHxS)	0.10	U	ug/Kg
Perfluorohexanoic acid (PFHxA)	0.10	U	ug/Kg
Perfluorononanesulfonic acid (PFNS)	0.10	U	ug/Kg
Perfluorononanoic acid (PFNA)	0.10	U	ug/Kg
Perfluorooctanesulfonic acid (PFOS)	0.20	U	ug/Kg
Perfluorooctanoic acid (PFOA)	0.10	U	ug/Kg
Perfluoropentanesulfonic acid (PFPeS)	0.10	U	ug/Kg
Perfluoropentanoic acid (PFPeA)	0.20	U	ug/Kg
Perfluorotetradecanoic acid (PFTeA)	0.10	U	ug/Kg
Perfluorotridecanoic acid (PFTriA)	0.10	U	ug/Kg
Perfluoroundecanoic acid (PFUnA)	0.10	U	ug/Kg

Reference Method: EPA 8321B
Batch ID: P369257

Component	Result	Code	Units
4:2 Fluorotelomer sulfonate (4:2 FTS)	2.0	U	ng/L
6:2 Fluorotelomer sulfonate (6:2 FTS)	4.0	U	ng/L
8:2 Fluorotelomer sulfonate (8:2 FTS)	2.0	U	ng/L
N-Et perfluorooctanesulfonamidoAc acid	0.40	U	ng/L
N-Me perfluorooctanesulfonamidoAc acid	0.40	U	ng/L
Perfluorobutanesulfonic acid (PFBS)	0.40	U	ng/L
Perfluorodecanesulfonic acid (PFDS)	0.40	U	ng/L
Perfluorodecanoic acid (PFDA)	1.0	U	ng/L
Perfluorododecanoic acid (PFDoA)	1.0	U	ng/L
Perfluoroheptanesulfonic acid (PFHpS)	0.40	U	ng/L
Perfluoroheptanoic acid (PFHpA)	0.40	U	ng/L
Perfluorohexanesulfonic acid (PFHxS)	0.40	U	ng/L
Perfluorohexanoic acid (PFHxA)	0.40	U	ng/L
Perfluorononanesulfonic acid (PFNS)	0.40	U	ng/L
Perfluorononanoic acid (PFNA)	1.0	U	ng/L
Perfluorooctanesulfonic acid (PFOS)	2.0	U	ng/L
Perfluorooctanoic acid (PFOA)	1.0	U	ng/L
Perfluoropentanesulfonic acid (PFPeS)	0.40	U	ng/L
Perfluoropentanoic acid (PFPeA)	1.0	U	ng/L
Perfluorotetradecanoic acid (PFTeA)	0.40	U	ng/L
Perfluorotridecanoic acid (PFTriA)	0.40	U	ng/L
Perfluoroundecanoic acid (PFUnA)	1.0	U	ng/L

Reference Method: EPA 8321B
Batch ID: P369719

Component	Result	Code	Units
4:2 Fluorotelomer sulfonate (4:2 FTS)	2.0	U	ng/L
6:2 Fluorotelomer sulfonate (6:2 FTS)	4.0	U	ng/L
8:2 Fluorotelomer sulfonate (8:2 FTS)	2.0	U	ng/L
N-Et perfluorooctanesulfonamidoAc acid	0.40	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P369719

Component	Result	Code	Units
N-Me perfluorooctanesulfonamidoAc acid	0.40	U	ng/L
Perfluorobutanesulfonic acid (PFBS)	0.40	U	ng/L
Perfluorodecanesulfonic acid (PFDS)	0.40	U	ng/L
Perfluorodecanoic acid (PFDA)	1.0	U	ng/L
Perfluorododecanoic acid (PFDoA)	1.0	U	ng/L
Perfluoroheptanesulfonic acid (PFHpS)	0.40	U	ng/L
Perfluoroheptanoic acid (PFHpA)	0.40	U	ng/L
Perfluorohexanesulfonic acid (PFHxS)	0.40	U	ng/L
Perfluorohexanoic acid (PFHxA)	0.40	U	ng/L
Perfluorononanesulfonic acid (PFNS)	0.40	U	ng/L
Perfluorononanoic acid (PFNA)	1.0	U	ng/L
Perfluorooctanesulfonic acid (PFOS)	2.0	U	ng/L
Perfluorooctanoic acid (PFOA)	1.0	U	ng/L
Perfluoropentanesulfonic acid (PFPeS)	0.40	U	ng/L
Perfluoropentanoic acid (PFPeA)	1.0	U	ng/L
Perfluorotetradecanoic acid (PFTeA)	0.40	U	ng/L
Perfluorotridecanoic acid (PFTriA)	0.40	U	ng/L
Perfluoroundecanoic acid (PFUnA)	1.0	U	ng/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 6020A
Batch ID: P369358

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	102		P	85 - 115
Barium	99.8		P	85 - 115
Cadmium	99.3		P	85 - 115
Chromium	96.5		P	85 - 115
Lead	96.6		P	85 - 115
Selenium	103		P	85 - 115
Silver	98.6		P	85 - 115

Reference Method: EPA 7473
Batch ID: P369289

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Mercury	101		P	80 - 120

Reference Method: EPA 8260D
Batch ID: P369571

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1,1-Dichloroethane	104	99.2	P/P	70 - 130
1,1-Dichloroethene	108	103	P/P	70 - 130
1,1,1-Trichloroethane	100	95.8	P/P	70 - 130
1,1,2-Trichloroethane	105	101	P/P	70 - 130
1,1,2,2-Tetrachloroethane	109	112	P/P	60 - 140
1,2-Dichlorobenzene	101	98.0	P/P	70 - 130
1,2-Dichloroethane	111	105	P/P	70 - 130
1,2-Dichloropropane	106	101	P/P	70 - 130
1,3-Dichlorobenzene	99.0	96.3	P/P	70 - 130
1,4-Dichlorobenzene	99.8	97.2	P/P	70 - 130
2-Butanone	96.4	91.6	P/P	60 - 140
Benzene	107	103	P/P	70 - 130
Bromodichloromethane	107	102	P/P	70 - 130
Bromoform	102	96.4	P/P	60 - 140
Bromomethane	107	102	P/P	60 - 140
Carbon tetrachloride	104	99.1	P/P	70 - 130
Chlorobenzene	109	104	P/P	70 - 130
Chloroethane	109	105	P/P	60 - 140
Chloroform	113	108	P/P	70 - 130
Chloromethane	104	97.4	P/P	60 - 140
cis-1,2-Dichloroethene	106	102	P/P	70 - 130
cis-1,3-Dichloropropene	101	98.0	P/P	60 - 140
Dibromochloromethane	108	103	P/P	60 - 140
Ethylbenzene	109	105	P/P	70 - 130
m,p-Xylene	110	107	P/P	70 - 130
Methyl-t-butyl ether	96.0	91.6	P/P	70 - 130
Methylene chloride	110	105	P/P	70 - 130
o-Xylene	110	106	P/P	70 - 130
Tetrachloroethene	110	106	P/P	70 - 130
Toluene	108	104	P/P	70 - 130
trans-1,2-Dichloroethene	110	105	P/P	70 - 130
trans-1,3-Dichloropropene	101	98.2	P/P	60 - 140
Trichloroethene	113	103	P/P	70 - 130
Trichlorofluoromethane	110	105	P/P	60 - 140

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8260D
 Batch ID: P369571

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Vinyl chloride	98.8	93.4	P/P	60 - 140

Reference Method: EPA 8270D
 Batch ID: P368985

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1-Methylnaphthalene	74.8	78.5	P/P	50 - 130
1-Naphthylamine	26.3	29.7	P/P	20 - 130
1,2,4-Trichlorobenzene	75.7	78.5	P/P	50 - 130
1,2,4,5-Tetrachlorobenzene	84.5	81.7	P/P	50 - 130
1,3-Dinitrobenzene	92.4	94.7	P/P	50 - 130
1,3,5-Trinitrobenzene	118	118	P/P	50 - 150
2-Acetylaminofluorene	88.0	88.2	P/P	50 - 130
2-Chloronaphthalene	75.1	79.2	P/P	50 - 130
2-Chlorophenol	80.2	79.8	P/P	50 - 130
2-Methyl-4,6-dinitrophenol	53.8	57.4	P/P	50 - 150
2-Methylnaphthalene	74.8	76.8	P/P	50 - 130
2-Naphthylamine	33.7	39.3	P/P	20 - 130
2-Nitroaniline	85.0	87.3	P/P	50 - 130
2-Nitrophenol	81.7	82.9	P/P	50 - 130
2-Picoline	74.0	71.9	P/P	40 - 130
2,3,4,6-Tetrachlorophenol	114	111	P/P	50 - 130
2,4-Dichlorophenol	78.9	78.3	P/P	50 - 130
2,4-Dimethylphenol	52.2	51.5	P/P	50 - 130
2,4-Dinitrophenol	36.6	39.0	P/P	30 - 160
2,4-Dinitrotoluene	86.4	92.2	P/P	50 - 130
2,4,5-Trichlorophenol	79.3	81.2	P/P	50 - 130
2,4,6-Trichlorophenol	79.1	81.6	P/P	50 - 130
2,6-Dichlorophenol	88.3	90.7	P/P	50 - 130
2,6-Dinitrotoluene	88.3	89.8	P/P	50 - 130
3-Methylcholanthrene	73.1	73.4	P/P	50 - 130
3,3'-Dichlorobenzidine	107	103	P/P	20 - 200
4-Aminobiphenyl	81.3	79.2	P/P	30 - 130
4-Bromophenyl phenyl ether	87.2	88.5	P/P	50 - 130
4-Chloro-3-methylphenol	84.2	86.8	P/P	50 - 130
4-Chlorophenyl phenyl ether	62.0	65.2	P/P	50 - 130
4-Nitrophenol	41.3	50.7	P/P	15 - 110
5-Nitro-o-toluidine	91.4	96.2	P/P	50 - 130
7,12-Dimethylbenz(a)anthracene	93.5	96.6	P/P	50 - 130
Acenaphthene	77.4	80.9	P/P	50 - 130
Acenaphthylene	74.8	78.4	P/P	50 - 130
Acetophenone	60.2	62.6	P/P	50 - 130
Aniline	68.5	69.0	P/P	30 - 130
Anthracene	87.4	86.1	P/P	50 - 130
Azobenzene/1,2-Diphenylhydrazine	84.8	83.9	P/P	50 - 130
Benzidine	19.9	15.9	P/P	0.0 - 240
Benzo(a)anthracene	91.8	92.0	P/P	50 - 130
Benzo(a)pyrene	90.1	88.8	P/P	50 - 130
Benzo(b)fluoranthene	89.4	88.2	P/P	50 - 130
Benzo(g,h,i)perylene	108	106	P/P	50 - 130
Benzo(k)fluoranthene	84.5	87.3	P/P	50 - 130
Benzyl alcohol	74.3	74.2	P/P	50 - 130

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270D
 Batch ID: P368985

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bis(2-chloroethoxy)methane	81.8	82.7	P/P	50 - 130
Bis(2-chloroethyl)ether	93.3	92.2	P/P	50 - 160
Bis(2-chloroisopropyl)ether	78.8	79.1	P/P	50 - 130
Bis(2-ethylhexyl)phthalate	90.3	89.7	P/P	50 - 160
Butyl benzyl phthalate	86.4	86.4	P/P	50 - 160
Carbazole	72.9	67.7	P/P	50 - 130
Chrysene	86.9	88.6	P/P	50 - 130
Di-n-butyl phthalate	88.9	88.2	P/P	50 - 130
Di-n-octyl phthalate	85.5	85.2	P/P	50 - 130
Dibenzo(a,h)anthracene	84.6	83.4	P/P	50 - 130
Dibenzofuran	79.3	82.5	P/P	50 - 130
Diethyl phthalate	79.4	82.3	P/P	50 - 130
Dimethyl phthalate	88.5	92.2	P/P	50 - 130
Dimethylaminoazobenzene	92.6	92.4	P/P	50 - 130
Dinoseb	76.6	80.6	P/P	50 - 150
Ethyl methanesulfonate	73.9	75.1	P/P	50 - 130
Fluoranthene	86.9	86.8	P/P	50 - 130
Fluorene	69.8	73.0	P/P	50 - 130
Hexachlorobenzene	86.1	86.7	P/P	50 - 130
Hexachlorobutadiene	74.4	76.4	P/P	20 - 130
Hexachlorocyclopentadiene	44.6	49.3	P/P	20 - 130
Hexachloroethane	77.6	76.1	P/P	40 - 130
Hexachloropropene	73.7	74.6	P/P	50 - 130
Indeno(1,2,3-cd)pyrene	78.7	76.8	P/P	50 - 130
Isophorone	81.2	82.8	P/P	50 - 130
Isosafrole	85.1	85.1	P/P	50 - 130
m,p-Cresols	80.2	82.2	P/P	50 - 130
N-Nitrosodi-n-butylamine	94.4	98.2	P/P	50 - 130
N-Nitrosodi-n-propylamine	79.5	78.7	P/P	50 - 130
N-Nitrosodiethylamine	78.4	83.3	P/P	50 - 130
N-Nitrosodimethylamine	62.7	64.0	P/P	30 - 130
N-Nitrosodiphenylamine/ Diphenylamine	69.8	70.3	P/P	50 - 150
N-Nitrosomethylethylamine	77.8	86.6	P/P	50 - 130
N-Nitrosomorpholine	74.0	76.0	P/P	50 - 150
N-Nitrosopiperidine	85.5	87.9	P/P	50 - 130
N-Nitrosopyrrolidine	54.3	56.8	P/P	50 - 130
Naphthalene	74.7	76.0	P/P	50 - 130
Nitrobenzene	81.5	84.3	P/P	50 - 130
o-Cresol	71.9	75.3	P/P	50 - 130
o-Toluidine	80.1	84.1	P/P	50 - 130
Pentachlorobenzene	89.7	90.4	P/P	50 - 130
Pentachloroethane	83.0	88.3	P/P	50 - 130
Pentachloronitrobenzene	99.1	103	P/P	50 - 130
Pentachlorophenol	58.7	62.5	P/P	50 - 130
Phenacetin	95.4	95.8	P/P	50 - 130
Phenanthrene	89.1	89.1	P/P	50 - 130
Phenol	42.1	54.7	P/P	15 - 110
Pyrene	84.6	85.3	P/P	50 - 130
Pyridine	49.3	46.3	P/P	20 - 130
Safrole	85.1	85.1	P/P	50 - 130

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P368342

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
N-Et perfluorooctanesulfonamidoAc acid	86.7		P	40 - 150
N-Me perfluorooctanesulfonamidoAc acid	90.3		P	40 - 150
Perfluorobutanesulfonic acid (PFBS)	105		P	40 - 150
Perfluorodecanoic acid (PFDA)	82.5		P	40 - 150
Perfluorododecanoic acid (PFDoA)	86.3		P	40 - 150
Perfluoroheptanoic acid (PFHpA)	94.1		P	40 - 150
Perfluorohexanesulfonic acid (PFHxS)	107		P	40 - 150
Perfluorohexanoic acid (PFHxA)	104		P	40 - 150
Perfluorononanoic acid (PFNA)	105		P	40 - 150
Perfluorooctanesulfonic acid (PFOS)	90.6		P	40 - 150
Perfluorooctanoic acid (PFOA)	105		P	40 - 150
Perfluorotetradecanoic acid (PFTeA)	94.2		P	40 - 150
Perfluorotridecanoic acid (PFTriA)	80.3		P	40 - 150
Perfluoroundecanoic acid (PFUnA)	79.8		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P369198

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	81.1		P	40 - 150
6:2 Fluorotelomer sulfonate (6:2 FTS)	85.4		P	40 - 150
8:2 Fluorotelomer sulfonate (8:2 FTS)	107		P	40 - 150
N-Et perfluorooctanesulfonamidoAc acid	88.2		P	40 - 150
N-Me perfluorooctanesulfonamidoAc acid	88.6		P	40 - 150
Perfluorobutanesulfonic acid (PFBS)	94.7		P	40 - 150
Perfluorodecanesulfonic acid (PFDS)	97.5		P	40 - 150
Perfluorodecanoic acid (PFDA)	82.9		P	40 - 150
Perfluorododecanoic acid (PFDoA)	105		P	40 - 150
Perfluoroheptanesulfonic acid (PFHpS)	91.6		P	40 - 150
Perfluoroheptanoic acid (PFHpA)	90.2		P	40 - 150
Perfluorohexanesulfonic acid (PFHxS)	95.6		P	40 - 150
Perfluorohexanoic acid (PFHxA)	84.2		P	40 - 150
Perfluorononanesulfonic acid (PFNS)	90.5		P	40 - 150
Perfluorononanoic acid (PFNA)	89.7		P	40 - 150
Perfluorooctanesulfonic acid (PFOS)	87.6		P	40 - 150
Perfluorooctanoic acid (PFOA)	91.9		P	40 - 150
Perfluoropentanesulfonic acid (PFPeS)	99.0		P	40 - 150
Perfluoropentanoic acid (PFPeA)	85.6		P	40 - 150
Perfluorotetradecanoic acid (PFTeA)	110		P	40 - 150
Perfluorotridecanoic acid (PFTriA)	96.2		P	40 - 150
Perfluoroundecanoic acid (PFUnA)	104		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P369253

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	77.3		P	40 - 150
6:2 Fluorotelomer sulfonate (6:2 FTS)	88.7		P	40 - 150
8:2 Fluorotelomer sulfonate (8:2 FTS)	116		P	40 - 150
N-Et perfluorooctanesulfonamidoAc acid	95.0		P	40 - 150
N-Me perfluorooctanesulfonamidoAc acid	94.7		P	40 - 150
Perfluorobutanesulfonic acid (PFBS)	74.1		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P369253

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Perfluorodecanesulfonic acid (PFDS)	93.6		P	40 - 150
Perfluorodecanoic acid (PFDA)	99.3		P	40 - 150
Perfluorododecanoic acid (PFDoA)	108		P	40 - 150
Perfluoroheptanesulfonic acid (PFHpS)	83.0		P	40 - 150
Perfluoroheptanoic acid (PFHpA)	89.6		P	40 - 150
Perfluorohexanesulfonic acid (PFHxS)	86.3		P	40 - 150
Perfluorohexanoic acid (PFHxA)	86.2		P	40 - 150
Perfluorononanesulfonic acid (PFNS)	87.3		P	40 - 150
Perfluorononanoic acid (PFNA)	88.7		P	40 - 150
Perfluorooctanesulfonic acid (PFOS)	83.6		P	40 - 150
Perfluorooctanoic acid (PFOA)	97.9		P	40 - 150
Perfluoropentanesulfonic acid (PFPeS)	85.2		P	40 - 150
Perfluoropentanoic acid (PFPeA)	88.2		P	40 - 150
Perfluorotetradecanoic acid (PFTeA)	148		P	40 - 150
Perfluorotridecanoic acid (PFTriA)	116		P	40 - 150
Perfluoroundecanoic acid (PFUnA)	132		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P369257

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	108	109	P/P	30 - 150
6:2 Fluorotelomer sulfonate (6:2 FTS)	105	115	P/P	30 - 150
8:2 Fluorotelomer sulfonate (8:2 FTS)	107	114	P/P	30 - 150
N-Et perfluorooctanesulfonamidoAc acid	73.3	78.7	P/P	30 - 150
N-Me perfluorooctanesulfonamidoAc acid	85.8	84.8	P/P	30 - 150
Perfluorobutanesulfonic acid (PFBS)	102	103	P/P	30 - 150
Perfluorodecanesulfonic acid (PFDS)	72.7	82.4	P/P	30 - 150
Perfluorodecanoic acid (PFDA)	70.1	69.0	P/P	30 - 150
Perfluorododecanoic acid (PFDoA)	62.2	72.6	P/P	30 - 150
Perfluoroheptanesulfonic acid (PFHpS)	97.7	96.5	P/P	30 - 150
Perfluoroheptanoic acid (PFHpA)	93.1	91.7	P/P	30 - 150
Perfluorohexanesulfonic acid (PFHxS)	102	101	P/P	30 - 150
Perfluorohexanoic acid (PFHxA)	110	97.6	P/P	30 - 150
Perfluorononanesulfonic acid (PFNS)	81.2	85.2	P/P	30 - 150
Perfluorononanoic acid (PFNA)	96.8	76.2	P/P	30 - 150
Perfluorooctanesulfonic acid (PFOS)	86.7	86.1	P/P	30 - 150
Perfluorooctanoic acid (PFOA)	91.6	86.6	P/P	30 - 150
Perfluoropentanesulfonic acid (PFPeS)	112	105	P/P	30 - 150
Perfluoropentanoic acid (PFPeA)	77.0	58.1	P/P	30 - 150
Perfluorotetradecanoic acid (PFTeA)	45.9	46.6	P/P	30 - 150
Perfluorotridecanoic acid (PFTriA)	46.0	53.3	P/P	30 - 150
Perfluoroundecanoic acid (PFUnA)	81.0	77.4	P/P	30 - 150

Reference Method: EPA 8321B
Batch ID: P369719

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	105	94.2	P/P	30 - 150
6:2 Fluorotelomer sulfonate (6:2 FTS)	121	104	P/P	30 - 150
8:2 Fluorotelomer sulfonate (8:2 FTS)	115	98.8	P/P	30 - 150
N-Et perfluorooctanesulfonamidoAc acid	77.9	66.2	P/P	30 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P369719

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
N-Me perfluorooctanesulfonamidoAc acid	84.9	77.0	P/P	30 - 150
Perfluorobutanesulfonic acid (PFBS)	89.9	81.6	P/P	30 - 150
Perfluorodecanesulfonic acid (PFDS)	71.3	69.7	P/P	30 - 150
Perfluorodecanoic acid (PFDA)	78.2	68.0	P/P	30 - 150
Perfluorododecanoic acid (PFDoA)	65.7	61.2	P/P	30 - 150
Perfluoroheptanesulfonic acid (PFHpS)	89.0	80.3	P/P	30 - 150
Perfluoroheptanoic acid (PFHpA)	87.9	77.9	P/P	30 - 150
Perfluorohexanesulfonic acid (PFHxS)	91.6	84.9	P/P	30 - 150
Perfluorohexanoic acid (PFHxA)	76.6	67.3	P/P	30 - 150
Perfluorononanesulfonic acid (PFNS)	83.5	79.3	P/P	30 - 150
Perfluorononanoic acid (PFNA)	87.5	68.9	P/P	30 - 150
Perfluorooctanesulfonic acid (PFOS)	91.6	83.0	P/P	30 - 150
Perfluorooctanoic acid (PFOA)	82.6	70.9	P/P	30 - 150
Perfluoropentanesulfonic acid (PFPeS)	90.9	83.8	P/P	30 - 150
Perfluoropentanoic acid (PFPeA)	55.3	47.0	P/P	30 - 150
Perfluorotetradecanoic acid (PFTeA)	59.0	49.4	P/P	30 - 150
Perfluorotridecanoic acid (PFTriA)	58.4	53.5	P/P	30 - 150
Perfluoroundecanoic acid (PFUnA)	77.3	59.3	P/P	30 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 6020A
Batch ID: P369358

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2111951	Arsenic	102		P	80 - 120
2111951	Barium	103		P	80 - 120
2111951	Cadmium	99.0		P	80 - 120
2111951	Chromium	99.0		P	80 - 120
2111951	Lead	99.1		P	80 - 120
2111951	Selenium	100		P	80 - 120
2111951	Silver	99.2		P	80 - 120
2112383	Arsenic	101	101	P/P	80 - 120
2112383	Barium	98.9	100	P/P	80 - 120
2112383	Cadmium	98.0	99.1	P/P	80 - 120
2112383	Chromium	98.4	99.9	P/P	80 - 120
2112383	Lead	97.9	98.7	P/P	80 - 120
2112383	Selenium	99.0	100	P/P	80 - 120
2112383	Silver	97.6	99.2	P/P	80 - 120

Reference Method: EPA 7473
Batch ID: P369289

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2112297	Mercury	101	101	P/P	80 - 120

Reference Method: EPA 8260D
Batch ID: P369571

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2112088	1,1-Dichloroethane	99.8	99.4	P/P	70 - 130
2112088	1,1-Dichloroethene	102	102	P/P	70 - 130
2112088	1,1,1-Trichloroethane	95.8	95.6	P/P	70 - 130
2112088	1,1,2-Trichloroethane	101	102	P/P	70 - 130
2112088	1,1,2,2-Tetrachloroethane	115	117	P/P	60 - 140
2112088	1,2-Dichlorobenzene	99.2	99.8	P/P	70 - 130
2112088	1,2-Dichloroethane	105	105	P/P	70 - 130
2112088	1,2-Dichloropropane	101	101	P/P	70 - 130
2112088	1,3-Dichlorobenzene	97.4	98.4	P/P	70 - 130
2112088	1,4-Dichlorobenzene	98.1	98.6	P/P	70 - 130
2112088	2-Butanone	90.8	93.7	P/P	60 - 140
2112088	Benzene	103	103	P/P	70 - 130
2112088	Bromodichloromethane	102	102	P/P	70 - 130
2112088	Bromoform	96.8	97.0	P/P	60 - 140
2112088	Bromomethane	100	102	P/P	60 - 140
2112088	Carbon tetrachloride	99.4	98.8	P/P	70 - 130
2112088	Chlorobenzene	105	105	P/P	70 - 130
2112088	Chloroethane	106	104	P/P	60 - 140
2112088	Chloroform	108	107	P/P	70 - 130
2112088	Chloromethane	98.0	99.1	P/P	60 - 140
2112088	cis-1,2-Dichloroethene	101	102	P/P	70 - 130
2112088	cis-1,3-Dichloropropene	98.6	98.8	P/P	60 - 140
2112088	Dibromochloromethane	103	104	P/P	60 - 140
2112088	Ethylbenzene	105	106	P/P	70 - 130
2112088	m,p-Xylene	107	107	P/P	70 - 130
2112088	Methyl-t-butyl ether	91.3	92.0	P/P	70 - 130
2112088	Methylene chloride	100	100	P/P	70 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8260D
 Batch ID: P369571

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2112088	o-Xylene	107	107	P/P	70 - 130
2112088	Tetrachloroethene	106	105	P/P	70 - 130
2112088	Toluene	104	104	P/P	70 - 130
2112088	trans-1,2-Dichloroethene	105	105	P/P	70 - 130
2112088	trans-1,3-Dichloropropene	98.4	98.9	P/P	60 - 140
2112088	Trichloroethene	101	100	P/P	70 - 130
2112088	Trichlorofluoromethane	105	104	P/P	60 - 140
2112088	Vinyl chloride	93.3	93.4	P/P	60 - 140

Reference Method: EPA 8270D
 Batch ID: P368985

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2110829	1-Methylnaphthalene	70.3	66.5	P/P	50 - 130
2110829	1-Naphthylamine	7.60	8.30	F/F	20 - 130
2110829	1,2,4-Trichlorobenzene	65.3	58.2	P/P	50 - 130
2110829	1,2,4,5-Tetrachlorobenzene	66.6	73.4	P/P	50 - 130
2110829	1,3-Dinitrobenzene	82.6	90.4	P/P	50 - 130
2110829	1,3,5-Trinitrobenzene	42.6	56.1	F/P	50 - 150
2110829	2-Acetylaminofluorene	91.7	92.5	P/P	50 - 130
2110829	2-Chloronaphthalene	70.6	68.3	P/P	50 - 130
2110829	2-Chlorophenol	68.5	67.4	P/P	50 - 130
2110829	2-Methyl-4,6-dinitrophenol	67.7	50.7	P/P	50 - 150
2110829	2-Methylnaphthalene	71.1	65.8	P/P	50 - 130
2110829	2-Naphthylamine	8.50	6.40	F/F	20 - 130
2110829	2-Nitroaniline	87.9	85.4	P/P	50 - 130
2110829	2-Nitrophenol	74.6	69.5	P/P	50 - 130
2110829	2-Picoline	69.4	72.8	P/P	40 - 130
2110829	2,3,4,6-Tetrachlorophenol	125	127	P/P	50 - 130
2110829	2,4-Dichlorophenol	78.8	72.5	P/P	50 - 130
2110829	2,4-Dimethylphenol	81.4	74.9	P/P	50 - 130
2110829	2,4-Dinitrophenol	107	82.7	P/P	30 - 160
2110829	2,4-Dinitrotoluene	86.5	82.9	P/P	50 - 130
2110829	2,4,5-Trichlorophenol	88.6	83.9	P/P	50 - 130
2110829	2,4,6-Trichlorophenol	83.3	82.1	P/P	50 - 130
2110829	2,6-Dichlorophenol	80.0	87.9	P/P	50 - 130
2110829	2,6-Dinitrotoluene	88.9	86.7	P/P	50 - 130
2110829	3-Methylcholanthrene	75.1	76.9	P/P	50 - 130
2110829	3,3'-Dichlorobenzidine	5.45	5.95	F/F	20 - 200
2110829	4-Aminobiphenyl	0.400	7.90	F/F	30 - 130
2110829	4-Bromophenyl phenyl ether	83.1	79.3	P/P	50 - 130
2110829	4-Chloro-3-methylphenol	91.0	84.7	P/P	50 - 130
2110829	4-Chlorophenyl phenyl ether	61.6	59.9	P/P	50 - 130
2110829	4-Nitrophenol	53.2	66.2	P/P	15 - 110
2110829	5-Nitro-o-toluidine	72.9	73.6	P/P	50 - 130
2110829	7,12-Dimethylbenz(a)anthracene	66.8	68.1	P/P	50 - 130
2110829	Acenaphthene	74.4	71.6	P/P	50 - 130
2110829	Acenaphthylene	73.5	70.2	P/P	50 - 130
2110829	Acetophenone	51.0	54.1	P/P	50 - 130
2110829	Aniline	64.5	66.4	P/P	30 - 130
2110829	Anthracene	83.1	78.3	P/P	50 - 130
2110829	Azobenzene/1,2-Diphenylhydrazine	73.7	71.4	P/P	50 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D
 Batch ID: P368985

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2110829	Benzidine	0.0	0.0	P/P	0.0 - 240
2110829	Benzo(a)anthracene	83.4	79.8	P/P	50 - 130
2110829	Benzo(a)pyrene	75.6	73.4	P/P	50 - 130
2110829	Benzo(b)fluoranthene	77.1	76.4	P/P	50 - 130
2110829	Benzo(g,h,i)perylene	74.3	74.0	P/P	50 - 130
2110829	Benzo(k)fluoranthene	70.2	70.5	P/P	50 - 130
2110829	Benzyl alcohol	66.1	68.8	P/P	50 - 130
2110829	Bis(2-chloroethoxy)methane	64.1	56.9	P/P	50 - 130
2110829	Bis(2-chloroethyl)ether	76.5	79.3	P/P	50 - 160
2110829	Bis(2-chloroisopropyl)ether	67.0	63.7	P/P	50 - 130
2110829	Bis(2-ethylhexyl)phthalate	76.4	71.6	P/P	50 - 160
2110829	Butyl benzyl phthalate	84.1	81.5	P/P	50 - 160
2110829	Carbazole	91.9	88.7	P/P	50 - 130
2110829	Chrysene	81.3	79.7	P/P	50 - 130
2110829	Di-n-butyl phthalate	84.3	80.5	P/P	50 - 130
2110829	Di-n-octyl phthalate	66.2	63.6	P/P	50 - 130
2110829	Dibenzo(a,h)anthracene	63.3	61.2	P/P	50 - 130
2110829	Dibenzofuran	77.4	74.3	P/P	50 - 130
2110829	Diethyl phthalate	77.2	75.4	P/P	50 - 130
2110829	Dimethyl phthalate	88.3	84.9	P/P	50 - 130
2110829	Dimethylaminoazobenzene	54.0	56.3	P/P	50 - 130
2110829	Dinoseb	98.1	124	P/P	50 - 150
2110829	Ethyl methanesulfonate	62.5	62.8	P/P	50 - 130
2110829	Fluoranthene	82.0	78.3	P/P	50 - 130
2110829	Fluorene	69.6	67.2	P/P	50 - 130
2110829	Hexachlorobenzene	79.4	75.5	P/P	50 - 130
2110829	Hexachlorobutadiene	62.3	55.2	P/P	20 - 130
2110829	Hexachlorocyclopentadiene	15.2	14.3	F/F	20 - 130
2110829	Hexachloroethane	58.4	55.3	P/P	40 - 130
2110829	Hexachloropropene	49.2	53.4	F/P	50 - 130
2110829	Indeno(1,2,3-cd)pyrene	57.1	55.9	P/P	50 - 130
2110829	Isophorone	74.7	68.7	P/P	50 - 130
2110829	Isosafrole	72.6	79.5	P/P	50 - 130
2110829	m,p-Cresols	70.8	74.8	P/P	50 - 130
2110829	N-Nitrosodi-n-butylamine	87.8	93.5	P/P	50 - 130
2110829	N-Nitrosodi-n-propylamine	66.5	67.8	P/P	50 - 130
2110829	N-Nitrosodiethylamine	68.0	73.2	P/P	50 - 130
2110829	N-Nitrosodimethylamine	51.7	51.2	P/P	30 - 130
2110829	N-Nitrosodiphenylamine/ Diphenylamine	68.2	66.1	P/P	50 - 150
2110829	N-Nitrosomethylethylamine	67.4	71.0	P/P	50 - 130
2110829	N-Nitrosomorpholine	64.4	67.1	P/P	50 - 150
2110829	N-Nitrosopiperidine	77.6	80.6	P/P	50 - 130
2110829	N-Nitrosopyrrolidine	44.7	47.6	F/F	50 - 130
2110829	Naphthalene	65.4	58.9	P/P	50 - 130
2110829	Nitrobenzene	74.1	65.0	P/P	50 - 130
2110829	o-Cresol	70.0	71.4	P/P	50 - 130
2110829	o-Toluidine	68.3	69.4	P/P	50 - 130
2110829	Pentachlorobenzene	79.4	84.2	P/P	50 - 130
2110829	Pentachloroethane	60.6	69.9	P/P	50 - 130
2110829	Pentachloronitrobenzene	89.8	91.4	P/P	50 - 130
2110829	Pentachlorophenol	101	97.7	P/P	50 - 130
2110829	Phenacetin	91.4	95.2	P/P	50 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D
 Batch ID: P368985

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2110829	Phenanthrene	83.5	79.8	P/P	50 - 130
2110829	Phenol	55.0	54.1	P/P	15 - 110
2110829	Pyrene	81.9	78.3	P/P	50 - 130
2110829	Pyridine	53.9	50.8	P/P	20 - 130
2110829	Safrole	72.6	79.5	P/P	50 - 130

Reference Method: EPA 8321B
 Batch ID: P368342

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2112542	N-Et perfluorooctanesulfonamidoAc acid	45.3	42.9	P/P	40 - 150
2112542	N-Me perfluorooctanesulfonamidoAc acid	45.7	41.1	P/P	40 - 150
2112542	Perfluorodecanoic acid (PFDA)	74.8	93.0	P/P	40 - 150
2112542	Perfluorododecanoic acid (PFDoA)	122	106	P/P	40 - 150
2112542	Perfluorononanoic acid (PFNA)	150	135	F/P	40 - 150
2112542	Perfluorotetradecanoic acid (PFTeA)	143	178	P/F	40 - 150
2112542	Perfluorotridecanoic acid (PFTriA)	140	140	P/P	40 - 150
2112542	Perfluoroundecanoic acid (PFUnA)	138	109	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P369198

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2112485	4:2 Fluorotelomer sulfonate (4:2 FTS)	102	89.5	P/P	40 - 150
2112485	6:2 Fluorotelomer sulfonate (6:2 FTS)	163	120	F/P	40 - 150
2112485	8:2 Fluorotelomer sulfonate (8:2 FTS)	167	153	F/F	40 - 150
2112485	N-Et perfluorooctanesulfonamidoAc acid	71.8	74.2	P/P	40 - 150
2112485	N-Me perfluorooctanesulfonamidoAc acid	69.1	67.4	P/P	40 - 150
2112485	Perfluorobutanesulfonic acid (PFBS)	77.5	75.9	P/P	40 - 150
2112485	Perfluorodecanesulfonic acid (PFDS)	104	98.4	P/P	40 - 150
2112485	Perfluorodecanoic acid (PFDA)	90.9	80.7	P/P	40 - 150
2112485	Perfluorododecanoic acid (PFDoA)	110	106	P/P	40 - 150
2112485	Perfluoroheptanesulfonic acid (PFHpS)	86.5	83.5	P/P	40 - 150
2112485	Perfluoroheptanoic acid (PFHpA)	91.4	89.1	P/P	40 - 150
2112485	Perfluorohexanesulfonic acid (PFHxS)	88.7	82.7	P/P	40 - 150
2112485	Perfluorohexanoic acid (PFHxA)	71.6	65.1	P/P	40 - 150
2112485	Perfluorononanesulfonic acid (PFNS)	90.5	86.4	P/P	40 - 150
2112485	Perfluorononanoic acid (PFNA)	81.7	95.3	P/P	40 - 150
2112485	Perfluorooctanesulfonic acid (PFOS)	91.1	79.1	P/P	40 - 150
2112485	Perfluorooctanoic acid (PFOA)	91.9	83.1	P/P	40 - 150
2112485	Perfluoropentanesulfonic acid (PFPeS)	85.4	83.6	P/P	40 - 150
2112485	Perfluoropentanoic acid (PFPeA)	77.0	79.0	P/P	40 - 150
2112485	Perfluorotetradecanoic acid (PFTeA)	124	121	P/P	40 - 150
2112485	Perfluorotridecanoic acid (PFTriA)	114	116	P/P	40 - 150
2112485	Perfluoroundecanoic acid (PFUnA)	100	120	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P369253

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2112536	4:2 Fluorotelomer sulfonate (4:2 FTS)	85.9	90.8	P/P	40 - 150
2112536	6:2 Fluorotelomer sulfonate (6:2 FTS)	129	136	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P369253

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2112536	8:2 Fluorotelomer sulfonate (8:2 FTS)	176	186	F/F	40 - 150
2112536	N-Et perfluorooctanesulfonamidoAc acid	86.2	88.2	P/P	40 - 150
2112536	N-Me perfluorooctanesulfonamidoAc acid	78.0	81.7	P/P	40 - 150
2112536	Perfluorobutanesulfonic acid (PFBS)	68.5	69.5	P/P	40 - 150
2112536	Perfluorodecanesulfonic acid (PFDS)	98.2	96.2	P/P	40 - 150
2112536	Perfluorodecanoic acid (PFDA)	97.8	112	P/P	40 - 150
2112536	Perfluorododecanoic acid (PFDoA)	131	138	P/P	40 - 150
2112536	Perfluoroheptanesulfonic acid (PFHpS)	78.7	81.5	P/P	40 - 150
2112536	Perfluoroheptanoic acid (PFHpA)	97.6	84.8	P/P	40 - 150
2112536	Perfluorohexanesulfonic acid (PFHxS)	88.7	89.1	P/P	40 - 150
2112536	Perfluorohexanoic acid (PFHxA)	72.3	76.7	P/P	40 - 150
2112536	Perfluorononanesulfonic acid (PFNS)	84.9	85.6	P/P	40 - 150
2112536	Perfluorononanoic acid (PFNA)	88.0	92.4	P/P	40 - 150
2112536	Perfluorooctanesulfonic acid (PFOS)	76.5	82.5	P/P	40 - 150
2112536	Perfluorooctanoic acid (PFOA)	86.9	85.4	P/P	40 - 150
2112536	Perfluoropentanesulfonic acid (PFPeS)	77.6	82.8	P/P	40 - 150
2112536	Perfluoropentanoic acid (PFPeA)	82.0	82.0	P/P	40 - 150
2112536	Perfluorotetradecanoic acid (PFTeA)	139	132	P/P	40 - 150
2112536	Perfluorotridecanoic acid (PFTriA)	111	106	P/P	40 - 150
2112536	Perfluoroundecanoic acid (PFUnA)	124	128	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 6020A
 Batch ID: P369358

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2112383	Arsenic	0.231	Spike	P	0 - 20
2112383	Barium	0.917	Spike	P	0 - 20
2112383	Cadmium	1.07	Spike	P	0 - 20
2112383	Chromium	1.51	Spike	P	0 - 20
2112383	Lead	0.773	Spike	P	0 - 20
2112383	Selenium	1.01	Spike	P	0 - 20
2112383	Silver	1.66	Spike	P	0 - 20

Reference Method: EPA 7473
 Batch ID: P369289

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2112297	Mercury	0.834	Spike	P	0 - 20

Reference Method: EPA 8260D
 Batch ID: P369571

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2112088	1,1-Dichloroethane	0.351	Spike	P	0 - 30
2112088	1,1-Dichloroethene	0.0489	Spike	P	0 - 30
2112088	1,1,1-Trichloroethane	0.209	Spike	P	0 - 30
2112088	1,1,2-Trichloroethane	0.986	Spike	P	0 - 30
2112088	1,1,2,2-Tetrachloroethane	1.77	Spike	P	0 - 30
2112088	1,2-Dichlorobenzene	0.603	Spike	P	0 - 30
2112088	1,2-Dichloroethane	0.0475	Spike	P	0 - 30
2112088	1,2-Dichloropropane	0.247	Spike	P	0 - 30
2112088	1,3-Dichlorobenzene	1.12	Spike	P	0 - 30
2112088	1,4-Dichlorobenzene	0.559	Spike	P	0 - 30
2112088	2-Butanone	3.18	Spike	P	0 - 30
2112088	Benzene	0.341	Spike	P	0 - 30
2112088	Bromodichloromethane	0.246	Spike	P	0 - 30
2112088	Bromoform	0.310	Spike	P	0 - 30
2112088	Bromomethane	2.02	Spike	P	0 - 30
2112088	Carbon tetrachloride	0.656	Spike	P	0 - 30
2112088	Chlorobenzene	0.191	Spike	P	0 - 30
2112088	Chloroethane	1.72	Spike	P	0 - 30
2112088	Chloroform	0.551	Spike	P	0 - 30
2112088	Chloromethane	1.07	Spike	P	0 - 30
2112088	cis-1,2-Dichloroethene	0.0985	Spike	P	0 - 30
2112088	cis-1,3-Dichloropropene	0.253	Spike	P	0 - 30
2112088	Dibromochloromethane	1.21	Spike	P	0 - 30
2112088	Ethylbenzene	0.237	Spike	P	0 - 30
2112088	m,p-Xylene	0.373	Spike	P	0 - 30
2112088	Methyl-t-butyl ether	0.709	Spike	P	0 - 30
2112088	Methylene chloride	0.250	Spike	P	0 - 30
2112088	o-Xylene	0.748	Spike	P	0 - 30
2112088	Tetrachloroethene	0.991	Spike	P	0 - 30
2112088	Toluene	0.529	Spike	P	0 - 30
2112088	trans-1,2-Dichloroethene	0.286	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8260D
 Batch ID: P369571

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2112088	trans-1,3-Dichloropropene	0.558	Spike	P	0 - 30
2112088	Trichloroethene	0.894	Spike	P	0 - 30
2112088	Trichlorofluoromethane	1.25	Spike	P	0 - 30
2112088	Vinyl chloride	0.161	Spike	P	0 - 30
LFB	1,1-Dichloroethane	4.87	LCS	P	0 - 30
LFB	1,1-Dichloroethene	4.47	LCS	P	0 - 30
LFB	1,1,1-Trichloroethane	4.49	LCS	P	0 - 30
LFB	1,1,2-Trichloroethane	4.01	LCS	P	0 - 30
LFB	1,1,2,2-Tetrachloroethane	3.53	LCS	P	0 - 30
LFB	1,2-Dichlorobenzene	2.82	LCS	P	0 - 30
LFB	1,2-Dichloroethane	5.29	LCS	P	0 - 30
LFB	1,2-Dichloropropane	4.70	LCS	P	0 - 30
LFB	1,3-Dichlorobenzene	2.76	LCS	P	0 - 30
LFB	1,4-Dichlorobenzene	2.59	LCS	P	0 - 30
LFB	2-Butanone	5.05	LCS	P	0 - 30
LFB	Benzene	4.47	LCS	P	0 - 30
LFB	Bromodichloromethane	5.31	LCS	P	0 - 30
LFB	Bromoform	5.94	LCS	P	0 - 30
LFB	Bromomethane	5.17	LCS	P	0 - 30
LFB	Carbon tetrachloride	5.07	LCS	P	0 - 30
LFB	Chlorobenzene	4.22	LCS	P	0 - 30
LFB	Chloroethane	3.97	LCS	P	0 - 30
LFB	Chloroform	4.75	LCS	P	0 - 30
LFB	Chloromethane	6.17	LCS	P	0 - 30
LFB	cis-1,2-Dichloroethene	3.91	LCS	P	0 - 30
LFB	cis-1,3-Dichloropropene	3.06	LCS	P	0 - 30
LFB	Dibromochloromethane	4.92	LCS	P	0 - 30
LFB	Ethylbenzene	3.92	LCS	P	0 - 30
LFB	m,p-Xylene	3.34	LCS	P	0 - 30
LFB	Methyl-t-butyl ether	4.80	LCS	P	0 - 30
LFB	Methylene chloride	4.61	LCS	P	0 - 30
LFB	o-Xylene	3.51	LCS	P	0 - 30
LFB	Tetrachloroethene	2.96	LCS	P	0 - 30
LFB	Toluene	4.24	LCS	P	0 - 30
LFB	trans-1,2-Dichloroethene	4.48	LCS	P	0 - 30
LFB	trans-1,3-Dichloropropene	2.66	LCS	P	0 - 30
LFB	Trichloroethene	9.43	LCS	P	0 - 30
LFB	Trichlorofluoromethane	4.78	LCS	P	0 - 30
LFB	Vinyl chloride	5.57	LCS	P	0 - 30

Reference Method: EPA 8270D
 Batch ID: P368985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110829	1-Methylnaphthalene	5.86	Spike	P	0 - 40
2110829	1,2,4-Trichlorobenzene	11.8	Spike	P	0 - 40
2110829	1,2,4,5-Tetrachlorobenzene	9.84	Spike	P	0 - 40
2110829	1,3-Dinitrobenzene	9.26	Spike	P	0 - 40
2110829	1,3,5-Trinitrobenzene	27.7	Spike	P	0 - 40
2110829	2-Acetylaminofluorene	1.18	Spike	P	0 - 40

Quality Assurance Report Precision

Reference Method: EPA 8270D
 Batch ID: P368985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110829	2-Chloronaphthalene	3.62	Spike	P	0 - 40
2110829	2-Chlorophenol	1.93	Spike	P	0 - 40
2110829	2-Methyl-4,6-dinitrophenol	29.0	Spike	P	0 - 40
2110829	2-Methylnaphthalene	8.05	Spike	P	0 - 40
2110829	2-Nitroaniline	3.15	Spike	P	0 - 40
2110829	2-Nitrophenol	7.30	Spike	P	0 - 40
2110829	2-Picoline	5.09	Spike	P	0 - 40
2110829	2,3,4,6-Tetrachlorophenol	1.65	Spike	P	0 - 40
2110829	2,4-Dichlorophenol	8.63	Spike	P	0 - 40
2110829	2,4-Dimethylphenol	8.62	Spike	P	0 - 40
2110829	2,4-Dinitrophenol	25.7	Spike	P	0 - 40
2110829	2,4-Dinitrotoluene	4.56	Spike	P	0 - 40
2110829	2,4,5-Trichlorophenol	5.76	Spike	P	0 - 40
2110829	2,4,6-Trichlorophenol	1.76	Spike	P	0 - 40
2110829	2,6-Dichlorophenol	9.72	Spike	P	0 - 40
2110829	2,6-Dinitrotoluene	2.81	Spike	P	0 - 40
2110829	3-Methylcholanthrene	2.68	Spike	P	0 - 40
2110829	4-Bromophenyl phenyl ether	4.99	Spike	P	0 - 40
2110829	4-Chloro-3-methylphenol	7.48	Spike	P	0 - 40
2110829	4-Chlorophenyl phenyl ether	3.11	Spike	P	0 - 40
2110829	4-Nitrophenol	21.5	Spike	P	0 - 40
2110829	5-Nitro-o-toluidine	1.23	Spike	P	0 - 40
2110829	7,12-Dimethylbenz(a)anthracene	2.23	Spike	P	0 - 40
2110829	Acenaphthene	4.14	Spike	P	0 - 40
2110829	Acenaphthylene	4.90	Spike	P	0 - 40
2110829	Acetophenone	6.21	Spike	P	0 - 40
2110829	Aniline	2.60	Spike	P	0 - 40
2110829	Anthracene	6.25	Spike	P	0 - 40
2110829	Azobenzene/1,2-Diphenylhydrazine	3.48	Spike	P	0 - 40
2110829	Benzo(a)anthracene	4.72	Spike	P	0 - 40
2110829	Benzo(a)pyrene	3.26	Spike	P	0 - 40
2110829	Benzo(b)fluoranthene	1.22	Spike	P	0 - 40
2110829	Benzo(g,h,i)perylene	0.711	Spike	P	0 - 40
2110829	Benzo(k)fluoranthene	0.120	Spike	P	0 - 40
2110829	Benzyl alcohol	3.70	Spike	P	0 - 40
2110829	Bis(2-chloroethoxy)methane	10.6	Spike	P	0 - 40
2110829	Bis(2-chloroethyl)ether	3.29	Spike	P	0 - 40
2110829	Bis(2-chloroisopropyl)ether	5.36	Spike	P	0 - 40
2110829	Bis(2-ethylhexyl)phthalate	6.79	Spike	P	0 - 40
2110829	Butyl benzyl phthalate	3.45	Spike	P	0 - 40
2110829	Carbazole	3.85	Spike	P	0 - 40
2110829	Chrysene	2.29	Spike	P	0 - 40
2110829	Di-n-butyl phthalate	4.92	Spike	P	0 - 40
2110829	Di-n-octyl phthalate	4.31	Spike	P	0 - 40
2110829	Dibenzo(a,h)anthracene	3.68	Spike	P	0 - 40
2110829	Dibenzofuran	4.39	Spike	P	0 - 40
2110829	Diethyl phthalate	2.67	Spike	P	0 - 40
2110829	Dimethyl phthalate	4.23	Spike	P	0 - 40
2110829	Dimethylaminoazobenzene	4.48	Spike	P	0 - 40
2110829	Dinoseb	23.8	Spike	P	0 - 40
2110829	Ethyl methanesulfonate	0.786	Spike	P	0 - 40

Quality Assurance Report Precision

Reference Method: EPA 8270D
 Batch ID: P368985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110829	Fluoranthene	4.92	Spike	P	0 - 40
2110829	Fluorene	3.82	Spike	P	0 - 40
2110829	Hexachlorobenzene	5.34	Spike	P	0 - 40
2110829	Hexachlorobutadiene	12.4	Spike	P	0 - 40
2110829	Hexachlorocyclopentadiene	6.41	Spike	P	0 - 40
2110829	Hexachloroethane	5.76	Spike	P	0 - 40
2110829	Hexachloropropene	8.49	Spike	P	0 - 40
2110829	Indeno(1,2,3-cd)pyrene	2.43	Spike	P	0 - 40
2110829	Isophorone	8.67	Spike	P	0 - 40
2110829	Isosafrole	9.38	Spike	P	0 - 40
2110829	m,p-Cresols	5.12	Spike	P	0 - 40
2110829	N-Nitrosodi-n-butylamine	6.59	Spike	P	0 - 40
2110829	N-Nitrosodi-n-propylamine	1.63	Spike	P	0 - 40
2110829	N-Nitrosodiethylamine	7.67	Spike	P	0 - 40
2110829	N-Nitrosodimethylamine	1.28	Spike	P	0 - 40
2110829	N-Nitrosodiphenylamine/ Diphenylamine	3.43	Spike	P	0 - 40
2110829	N-Nitrosomethylethylamine	5.51	Spike	P	0 - 40
2110829	N-Nitrosomorpholine	4.41	Spike	P	0 - 40
2110829	N-Nitrosopiperidine	4.10	Spike	P	0 - 40
2110829	N-Nitrosopyrrolidine	6.59	Spike	P	0 - 40
2110829	Naphthalene	10.8	Spike	P	0 - 40
2110829	Nitrobenzene	13.4	Spike	P	0 - 40
2110829	o-Cresol	1.67	Spike	P	0 - 40
2110829	o-Toluidine	1.90	Spike	P	0 - 40
2110829	Pentachlorobenzene	6.17	Spike	P	0 - 40
2110829	Pentachloroethane	14.6	Spike	P	0 - 40
2110829	Pentachloronitrobenzene	2.07	Spike	P	0 - 40
2110829	Pentachlorophenol	3.73	Spike	P	0 - 40
2110829	Phenacetin	4.38	Spike	P	0 - 40
2110829	Phenanthrene	4.84	Spike	P	0 - 40
2110829	Phenol	1.96	Spike	P	0 - 40
2110829	Pyrene	4.80	Spike	P	0 - 40
2110829	Pyridine	6.23	Spike	P	0 - 40
2110829	Safrole	9.38	Spike	P	0 - 40
LFB	1-Methylnaphthalene	4.83	LCS	P	0 - 40
LFB	1-Naphthylamine	12.1	LCS	P	0 - 40
LFB	1,2,4-Trichlorobenzene	3.63	LCS	P	0 - 40
LFB	1,2,4,5-Tetrachlorobenzene	3.37	LCS	P	0 - 40
LFB	1,3-Dinitrobenzene	2.40	LCS	P	0 - 40
LFB	1,3,5-Trinitrobenzene	0.425	LCS	P	0 - 40
LFB	2-Acetylaminofluorene	0.227	LCS	P	0 - 40
LFB	2-Chloronaphthalene	5.31	LCS	P	0 - 40
LFB	2-Chlorophenol	0.500	LCS	P	0 - 40
LFB	2-Methyl-4,6-dinitrophenol	6.47	LCS	P	0 - 40
LFB	2-Methylnaphthalene	2.64	LCS	P	0 - 40
LFB	2-Naphthylamine	15.3	LCS	P	0 - 40
LFB	2-Nitroaniline	2.67	LCS	P	0 - 40
LFB	2-Nitrophenol	1.46	LCS	P	0 - 40
LFB	2-Picoline	2.88	LCS	P	0 - 40
LFB	2,3,4,6-Tetrachlorophenol	2.27	LCS	P	0 - 40
LFB	2,4-Dichlorophenol	0.763	LCS	P	0 - 40

Quality Assurance Report Precision

Reference Method: EPA 8270D

Batch ID: P368985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	2,4-Dimethylphenol	1.35	LCS	P	0 - 40
LFB	2,4-Dinitrophenol	6.35	LCS	P	0 - 40
LFB	2,4-Dinitrotoluene	6.49	LCS	P	0 - 40
LFB	2,4,5-Trichlorophenol	2.37	LCS	P	0 - 40
LFB	2,4,6-Trichlorophenol	3.11	LCS	P	0 - 40
LFB	2,6-Dichlorophenol	2.68	LCS	P	0 - 40
LFB	2,6-Dinitrotoluene	1.68	LCS	P	0 - 40
LFB	3-Methylcholanthrene	0.410	LCS	P	0 - 40
LFB	3,3'-Dichlorobenzidine	3.99	LCS	P	0 - 40
LFB	4-Aminobiphenyl	2.62	LCS	P	0 - 40
LFB	4-Bromophenyl phenyl ether	1.48	LCS	P	0 - 40
LFB	4-Chloro-3-methylphenol	3.04	LCS	P	0 - 40
LFB	4-Chlorophenyl phenyl ether	5.03	LCS	P	0 - 40
LFB	4-Nitrophenol	20.4	LCS	P	0 - 40
LFB	5-Nitro-o-toluidine	5.12	LCS	P	0 - 40
LFB	7,12-Dimethylbenz(a)anthracene	3.26	LCS	P	0 - 40
LFB	Acenaphthene	4.42	LCS	P	0 - 40
LFB	Acenaphthylene	4.70	LCS	P	0 - 40
LFB	Acetophenone	3.91	LCS	P	0 - 40
LFB	Aniline	0.727	LCS	P	0 - 40
LFB	Anthracene	1.50	LCS	P	0 - 40
LFB	Azobenzene/1,2-Diphenylhydrazine	1.07	LCS	P	0 - 40
LFB	Benzidine	22.3	LCS	P	0 - 40
LFB	Benzo(a)anthracene	0.218	LCS	P	0 - 40
LFB	Benzo(a)pyrene	1.45	LCS	P	0 - 40
LFB	Benzo(b)fluoranthene	1.35	LCS	P	0 - 40
LFB	Benzo(g,h,i)perylene	1.21	LCS	P	0 - 40
LFB	Benzo(k)fluoranthene	3.26	LCS	P	0 - 40
LFB	Benzyl alcohol	0.135	LCS	P	0 - 40
LFB	Bis(2-chloroethoxy)methane	1.09	LCS	P	0 - 40
LFB	Bis(2-chloroethyl)ether	1.19	LCS	P	0 - 40
LFB	Bis(2-chloroisopropyl)ether	0.380	LCS	P	0 - 40
LFB	Bis(2-ethylhexyl)phthalate	0.667	LCS	P	0 - 40
LFB	Butyl benzyl phthalate	0.0	LCS	P	0 - 40
LFB	Carbazole	7.40	LCS	P	0 - 40
LFB	Chrysene	1.94	LCS	P	0 - 40
LFB	Di-n-butyl phthalate	0.791	LCS	P	0 - 40
LFB	Di-n-octyl phthalate	0.351	LCS	P	0 - 40
LFB	Dibenzo(a,h)anthracene	1.43	LCS	P	0 - 40
LFB	Dibenzofuran	3.96	LCS	P	0 - 40
LFB	Diethyl phthalate	3.59	LCS	P	0 - 40
LFB	Dimethyl phthalate	4.10	LCS	P	0 - 40
LFB	Dimethylaminoazobenzene	0.216	LCS	P	0 - 40
LFB	Dinoseb	5.09	LCS	P	0 - 40
LFB	Ethyl methanesulfonate	1.61	LCS	P	0 - 40
LFB	Fluoranthene	0.115	LCS	P	0 - 40
LFB	Fluorene	4.48	LCS	P	0 - 40
LFB	Hexachlorobenzene	0.694	LCS	P	0 - 40
LFB	Hexachlorobutadiene	2.65	LCS	P	0 - 40
LFB	Hexachlorocyclopentadiene	10.0	LCS	P	0 - 40
LFB	Hexachloroethane	1.95	LCS	P	0 - 40

Quality Assurance Report Precision

Reference Method: EPA 8270D
 Batch ID: P368985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Hexachloropropene	1.21	LCS	P	0 - 40
LFB	Indeno(1,2,3-cd)pyrene	2.44	LCS	P	0 - 40
LFB	Isophorone	1.95	LCS	P	0 - 40
LFB	Isosafrole	0.0	LCS	P	0 - 40
LFB	m,p-Cresols	2.34	LCS	P	0 - 40
LFB	N-Nitrosodi-n-butylamine	3.95	LCS	P	0 - 40
LFB	N-Nitrosodi-n-propylamine	1.01	LCS	P	0 - 40
LFB	N-Nitrosodiethylamine	6.06	LCS	P	0 - 40
LFB	N-Nitrosodimethylamine	2.05	LCS	P	0 - 40
LFB	N-Nitrosodiphenylamine/ Diphenylamine	0.714	LCS	P	0 - 40
LFB	N-Nitrosomethylethylamine	10.7	LCS	P	0 - 40
LFB	N-Nitrosomorpholine	2.67	LCS	P	0 - 40
LFB	N-Nitrosopiperidine	2.77	LCS	P	0 - 40
LFB	N-Nitrosopyrrolidine	4.50	LCS	P	0 - 40
LFB	Naphthalene	1.73	LCS	P	0 - 40
LFB	Nitrobenzene	3.38	LCS	P	0 - 40
LFB	o-Cresol	4.62	LCS	P	0 - 40
LFB	o-Toluidine	4.87	LCS	P	0 - 40
LFB	Pentachlorobenzene	0.777	LCS	P	0 - 40
LFB	Pentachloroethane	6.19	LCS	P	0 - 40
LFB	Pentachloronitrobenzene	4.05	LCS	P	0 - 40
LFB	Pentachlorophenol	6.27	LCS	P	0 - 40
LFB	Phenacetin	0.418	LCS	P	0 - 40
LFB	Phenanthrene	0.0	LCS	P	0 - 40
LFB	Phenol	26.0	LCS	P	0 - 40
LFB	Pyrene	0.824	LCS	P	0 - 40
LFB	Pyridine	6.28	LCS	P	0 - 40
LFB	Safrole	0.0	LCS	P	0 - 40

Reference Method: EPA 8321B
 Batch ID: P368342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2112542	N-Et perfluorooctanesulfonamidoAc acid	5.41	Spike	P	0 - 35
2112542	N-Me perfluorooctanesulfonamidoAc acid	10.7	Spike	P	0 - 35
2112542	Perfluorobutanesulfonic acid (PFBS)	2.17	Spike	P	0 - 35
2112542	Perfluorodecanoic acid (PFDA)	21.7	Spike	P	0 - 35
2112542	Perfluorododecanoic acid (PFDoA)	13.6	Spike	P	0 - 35
2112542	Perfluoroheptanoic acid (PFHpA)	16.1	Spike	P	0 - 35
2112542	Perfluorohexanesulfonic acid (PFHxS)	1.06	Spike	P	0 - 35
2112542	Perfluorohexanoic acid (PFHxA)	19.6	Spike	P	0 - 35
2112542	Perfluorononanoic acid (PFNA)	9.68	Spike	P	0 - 35
2112542	Perfluorooctanesulfonic acid (PFOS)	2.73	Spike	P	0 - 35
2112542	Perfluorooctanoic acid (PFOA)	26.4	Spike	P	0 - 35
2112542	Perfluorotetradecanoic acid (PFTeA)	21.8	Spike	P	0 - 35
2112542	Perfluorotridecanoic acid (PFTriA)	0.518	Spike	P	0 - 35
2112542	Perfluoroundecanoic acid (PFUnA)	23.7	Spike	P	0 - 35

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P369198

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2112485	4:2 Fluorotelomer sulfonate (4:2 FTS)	13.2	Spike	P	0 - 35
2112485	6:2 Fluorotelomer sulfonate (6:2 FTS)	18.6	Spike	P	0 - 35
2112485	8:2 Fluorotelomer sulfonate (8:2 FTS)	7.13	Spike	P	0 - 35
2112485	N-Et perfluorooctanesulfonamidoAc acid	3.28	Spike	P	0 - 35
2112485	N-Me perfluorooctanesulfonamidoAc acid	2.49	Spike	P	0 - 35
2112485	Perfluorobutanesulfonic acid (PFBS)	2.15	Spike	P	0 - 35
2112485	Perfluorodecanesulfonic acid (PFDS)	5.85	Spike	P	0 - 35
2112485	Perfluorodecanoic acid (PFDA)	11.9	Spike	P	0 - 35
2112485	Perfluorododecanoic acid (PFDoA)	3.80	Spike	P	0 - 35
2112485	Perfluoroheptanesulfonic acid (PFHpS)	3.53	Spike	P	0 - 35
2112485	Perfluoroheptanoic acid (PFHpA)	2.63	Spike	P	0 - 35
2112485	Perfluorohexanesulfonic acid (PFHxS)	7.01	Spike	P	0 - 35
2112485	Perfluorohexanoic acid (PFHxA)	7.06	Spike	P	0 - 35
2112485	Perfluorononanesulfonic acid (PFNS)	4.70	Spike	P	0 - 35
2112485	Perfluorononanoic acid (PFNA)	15.4	Spike	P	0 - 35
2112485	Perfluorooctanesulfonic acid (PFOS)	8.86	Spike	P	0 - 35
2112485	Perfluorooctanoic acid (PFOA)	10.1	Spike	P	0 - 35
2112485	Perfluoropentanesulfonic acid (PFPeS)	2.16	Spike	P	0 - 35
2112485	Perfluoropentanoic acid (PFPeA)	2.50	Spike	P	0 - 35
2112485	Perfluorotetradecanoic acid (PFTeA)	2.68	Spike	P	0 - 35
2112485	Perfluorotridecanoic acid (PFTriA)	1.63	Spike	P	0 - 35
2112485	Perfluoroundecanoic acid (PFUnA)	17.5	Spike	P	0 - 35

Reference Method: EPA 8321B
 Batch ID: P369253

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2112536	4:2 Fluorotelomer sulfonate (4:2 FTS)	5.50	Spike	P	0 - 35
2112536	6:2 Fluorotelomer sulfonate (6:2 FTS)	5.48	Spike	P	0 - 35
2112536	8:2 Fluorotelomer sulfonate (8:2 FTS)	5.74	Spike	P	0 - 35
2112536	N-Et perfluorooctanesulfonamidoAc acid	2.26	Spike	P	0 - 35
2112536	N-Me perfluorooctanesulfonamidoAc acid	4.65	Spike	P	0 - 35
2112536	Perfluorobutanesulfonic acid (PFBS)	1.41	Spike	P	0 - 35
2112536	Perfluorodecanesulfonic acid (PFDS)	2.06	Spike	P	0 - 35
2112536	Perfluorodecanoic acid (PFDA)	13.8	Spike	P	0 - 35
2112536	Perfluorododecanoic acid (PFDoA)	4.69	Spike	P	0 - 35
2112536	Perfluoroheptanesulfonic acid (PFHpS)	3.46	Spike	P	0 - 35
2112536	Perfluoroheptanoic acid (PFHpA)	11.4	Spike	P	0 - 35
2112536	Perfluorohexanesulfonic acid (PFHxS)	0.448	Spike	P	0 - 35
2112536	Perfluorohexanoic acid (PFHxA)	4.70	Spike	P	0 - 35
2112536	Perfluorononanesulfonic acid (PFNS)	0.825	Spike	P	0 - 35
2112536	Perfluorononanoic acid (PFNA)	4.80	Spike	P	0 - 35
2112536	Perfluorooctanesulfonic acid (PFOS)	3.42	Spike	P	0 - 35
2112536	Perfluorooctanoic acid (PFOA)	1.47	Spike	P	0 - 35
2112536	Perfluoropentanesulfonic acid (PFPeS)	6.46	Spike	P	0 - 35
2112536	Perfluoropentanoic acid (PFPeA)	0.0696	Spike	P	0 - 35
2112536	Perfluorotetradecanoic acid (PFTeA)	5.05	Spike	P	0 - 35
2112536	Perfluorotridecanoic acid (PFTriA)	4.23	Spike	P	0 - 35
2112536	Perfluoroundecanoic acid (PFUnA)	3.14	Spike	P	0 - 35

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P369257

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	4:2 Fluorotelomer sulfonate (4:2 FTS)	1.52	LCS	P	0 - 30
LFB	6:2 Fluorotelomer sulfonate (6:2 FTS)	8.94	LCS	P	0 - 30
LFB	8:2 Fluorotelomer sulfonate (8:2 FTS)	6.22	LCS	P	0 - 30
LFB	N-Et perfluorooctanesulfonamidoAc acid	7.10	LCS	P	0 - 30
LFB	N-Me perfluorooctanesulfonamidoAc acid	1.22	LCS	P	0 - 30
LFB	Perfluorobutanesulfonic acid (PFBS)	0.584	LCS	P	0 - 30
LFB	Perfluorodecanesulfonic acid (PFDS)	12.5	LCS	P	0 - 30
LFB	Perfluorodecanoic acid (PFDA)	1.56	LCS	P	0 - 30
LFB	Perfluorododecanoic acid (PFDoA)	15.5	LCS	P	0 - 30
LFB	Perfluoroheptanesulfonic acid (PFHpS)	1.27	LCS	P	0 - 30
LFB	Perfluoroheptanoic acid (PFHpA)	1.44	LCS	P	0 - 30
LFB	Perfluorohexanesulfonic acid (PFHxS)	1.48	LCS	P	0 - 30
LFB	Perfluorohexanoic acid (PFHxA)	12.0	LCS	P	0 - 30
LFB	Perfluorononanesulfonic acid (PFNS)	4.81	LCS	P	0 - 30
LFB	Perfluorononanoic acid (PFNA)	23.9	LCS	P	0 - 30
LFB	Perfluorooctanesulfonic acid (PFOS)	0.629	LCS	P	0 - 30
LFB	Perfluorooctanoic acid (PFOA)	5.72	LCS	P	0 - 30
LFB	Perfluoropentanesulfonic acid (PFPeS)	6.09	LCS	P	0 - 30
LFB	Perfluoropentanoic acid (PFPeA)	27.9	LCS	P	0 - 30
LFB	Perfluorotetradecanoic acid (PFTeA)	1.38	LCS	P	0 - 30
LFB	Perfluorotridecanoic acid (PFTriA)	14.7	LCS	P	0 - 30
LFB	Perfluoroundecanoic acid (PFUnA)	4.52	LCS	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P369719

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	4:2 Fluorotelomer sulfonate (4:2 FTS)	10.4	LCS	P	0 - 30
LFB	6:2 Fluorotelomer sulfonate (6:2 FTS)	15.2	LCS	P	0 - 30
LFB	8:2 Fluorotelomer sulfonate (8:2 FTS)	15.5	LCS	P	0 - 30
LFB	N-Et perfluorooctanesulfonamidoAc acid	16.2	LCS	P	0 - 30
LFB	N-Me perfluorooctanesulfonamidoAc acid	9.73	LCS	P	0 - 30
LFB	Perfluorobutanesulfonic acid (PFBS)	9.71	LCS	P	0 - 30
LFB	Perfluorodecanesulfonic acid (PFDS)	2.25	LCS	P	0 - 30
LFB	Perfluorodecanoic acid (PFDA)	14.0	LCS	P	0 - 30
LFB	Perfluorododecanoic acid (PFDoA)	7.10	LCS	P	0 - 30
LFB	Perfluoroheptanesulfonic acid (PFHpS)	10.3	LCS	P	0 - 30
LFB	Perfluoroheptanoic acid (PFHpA)	12.1	LCS	P	0 - 30
LFB	Perfluorohexanesulfonic acid (PFHxS)	7.57	LCS	P	0 - 30
LFB	Perfluorohexanoic acid (PFHxA)	12.9	LCS	P	0 - 30
LFB	Perfluorononanesulfonic acid (PFNS)	5.10	LCS	P	0 - 30
LFB	Perfluorononanoic acid (PFNA)	23.7	LCS	P	0 - 30
LFB	Perfluorooctanesulfonic acid (PFOS)	9.90	LCS	P	0 - 30
LFB	Perfluorooctanoic acid (PFOA)	15.2	LCS	P	0 - 30
LFB	Perfluoropentanesulfonic acid (PFPeS)	8.14	LCS	P	0 - 30
LFB	Perfluoropentanoic acid (PFPeA)	16.4	LCS	P	0 - 30
LFB	Perfluorotetradecanoic acid (PFTeA)	17.6	LCS	P	0 - 30
LFB	Perfluorotridecanoic acid (PFTriA)	8.66	LCS	P	0 - 30
LFB	Perfluoroundecanoic acid (PFUnA)	26.3	LCS	P	0 - 30

Quality Assurance Report Precision

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 2112528
Field Sample ID: SS-1(0-1')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	86.8	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	88.7	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	85.7	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	82.6	P	30 - 160

Lab Sample ID: 2112529
Field Sample ID: SS-1(1-2')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	86.8	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	85.2	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	84.3	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	70.8	P	30 - 160

Lab Sample ID: 2112530
Field Sample ID: SS-2(0-1')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	92.7	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	83.0	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	89.1	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	61.3	P	30 - 160

Lab Sample ID: 2112531
Field Sample ID: SS-2(1-2')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	85.9	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	85.8	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	85.8	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	79.3	P	30 - 160

Lab Sample ID: 2112532
Field Sample ID: SS-3(0-1')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	102	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	113	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	103	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	76.6	P	30 - 160

Lab Sample ID: 2112533
Field Sample ID: SS-3(1-2')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	95.4	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	95.3	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	82.4	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	77.5	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2112534
 Field Sample ID: SS-4(0-1')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	89.7	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	93.0	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	89.0	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	64.7	P	30 - 160

Lab Sample ID: 2112535
 Field Sample ID: SS-4(1-2')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	84.6	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	109	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	84.6	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	79.4	P	30 - 160

Lab Sample ID: 2112536
 Field Sample ID: SS-5(0-1')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	73.0	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	137	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	80.2	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	76.8	P	30 - 160

Lab Sample ID: 2112537
 Field Sample ID: SS-5(1-2')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	67.2	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	94.9	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	72.6	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	65.7	P	30 - 160

Lab Sample ID: 2112538
 Field Sample ID: SS-6(0-1')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	73.9	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	126	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	81.4	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	81.4	P	30 - 160

Lab Sample ID: 2112539
 Field Sample ID: SS-6(1-2')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	72.6	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	123	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	79.7	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	69.0	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2112540
Field Sample ID: SS-7(0-1')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	79.3	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	126	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	89.4	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	75.8	P	30 - 160

Lab Sample ID: 2112541
Field Sample ID: SS-7(1-2')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	72.7	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	114	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	80.8	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	81.8	P	30 - 160

Lab Sample ID: 2112542
Field Sample ID: Chlorhexidine Gluconate

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	70.4	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	77.7	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	60.8	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	84.1	P	30 - 160

Lab Sample ID: 2112543
Field Sample ID: TMW-1(4-14)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	90.9	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	138	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	98.0	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	36.8	P	30 - 160

Lab Sample ID: 2112544
Field Sample ID: DUP-2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	90.4	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	106	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	98.2	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	32.4	P	30 - 160

Lab Sample ID: 2112545
Field Sample ID: EQB-1

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	84.0	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	81.9	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	84.5	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	69.3	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2112546
Field Sample ID: EQB-2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	91.8	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	94.0	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	90.7	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	73.1	P	30 - 160

Lab Sample ID: 2112547
Field Sample ID: EQB-3

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	88.6	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	103	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	89.1	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	80.1	P	30 - 160

Lab Sample ID: 2112568
Field Sample ID: SED-1(0-1')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	68.0	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	146	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	74.2	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	68.2	P	30 - 160

Lab Sample ID: 2112569
Field Sample ID: SED-2(0-1')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	69.5	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	114	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	76.3	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	68.7	P	30 - 160

Lab Sample ID: 2112570
Field Sample ID: SED-3(0-1')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	75.9	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	107	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	84.4	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	66.4	P	30 - 160

Lab Sample ID: 2112571
Field Sample ID: SED-4(0-1')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	68.0	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	106	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	76.7	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	71.7	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2112572
Field Sample ID: SED-5(0-1')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	62.8	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	118	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	70.8	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	62.0	P	30 - 160

Lab Sample ID: 2112573
Field Sample ID: SED-6(0-1')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	59.9	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	106	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	66.7	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	63.4	P	30 - 160

Lab Sample ID: 2112574
Field Sample ID: SED-7(0-1')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	66.3	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	105	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	73.5	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	68.4	P	30 - 160

Lab Sample ID: 2112575
Field Sample ID: IDW-1-WATER

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	2-Fluorobiphenyl	87.7	P	30 - 150
EPA 8270D	2-Fluorophenol	83.8	P	20 - 150
EPA 8270D	2,4,6-Tribromophenol	93.2	P	30 - 150
EPA 8270D	Nitrobenzene-d5	95.6	P	30 - 150
EPA 8270D	Phenol-d5	66.1	P	20 - 150
EPA 8270D	Terphenyl-d14	118	P	30 - 150

Lab Sample ID: 2112578
Field Sample ID: SW-1

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	100	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	114	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	103	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	97.0	P	30 - 160

Lab Sample ID: 2112579
Field Sample ID: DUP-1

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	95.0	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	91.6	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	100	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	99.9	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2112580
Field Sample ID: SW-2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	104	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	72.3	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	103	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	100	P	30 - 160

Lab Sample ID: 2112581
Field Sample ID: TMW-2(4-14')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	127	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	76.0	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	119	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	71.0	P	30 - 160

Lab Sample ID: 2112582
Field Sample ID: FRB-1

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	101	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	102	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	102	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	92.6	P	30 - 160

Lab Sample ID: 2112583
Field Sample ID: IDW-1-WATER

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	119	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	78.0	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	114	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	61.4	P	30 - 160

Lab Sample ID: 2112584
Field Sample ID: IDW-1-WATER

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8260D	1,2-Dichloroethane-d4	118	P	70 - 130
EPA 8260D	1,4-Dichlorobenzene-d4	92.4	P	70 - 130
EPA 8260D	Dibromofluoromethane	112	P	70 - 130
EPA 8260D	Toluene-d8	96.8	P	70 - 130

Quality Assurance Report Calibration Verification

Reference Method: EPA 7473
Run ID: A93622
Included Lab Sample IDs: 2112576

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Mercury	103	94.3	P/P	80 - 120

Reference Method: EPA 8321B
Run ID: A93676

Included Lab Sample IDs: 2112528, 2112529, 2112530, 2112531, 2112532, 2112533, 2112534, 2112535, 2112536, 2112537, 2112538, 2112539, 2112540, 2112541, 2112568, 2112569, 2112570, 2112571, 2112572, 2112573, 2112574

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	81.8	82.4	P/P	60 - 160
4:2 Fluorotelomer sulfonate (4:2 FTS)	82.4	81.1	P/P	60 - 160
4:2 Fluorotelomer sulfonate (4:2 FTS)	85.6	88.1	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	81.4	91.5	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	88.2	89.8	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	89.6	90.3	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	89.8	94.8	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	90.3	92.6	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	94.8	89.6	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	106	117	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	117	121	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	118	120	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	120	117	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	121	125	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	125	121	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	102	103	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	103	108	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	88.4	100	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	84.7	100	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	101	99.6	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	86.7	99.1	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	96.9	101	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	83.8	99.1	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	75.1	74.1	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	78.6	75.1	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	97.2	78.2	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	99.0	78.2	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	102	109	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	104	105	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	109	106	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	109	121	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	121	109	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	74.2	106	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	84.1	106	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	130	143	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	143	139	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	94.3	120	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	109	120	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	87.5	84.5	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	88.8	87.5	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	95.9	88.3	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	110	99.9	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	110	110	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A93676

Included Lab Sample IDs: 2112528, 2112529, 2112530, 2112531, 2112532, 2112533, 2112534, 2112535, 2112536, 2112537, 2112538, 2112539, 2112540, 2112541, 2112568, 2112569, 2112570, 2112571, 2112572, 2112573, 2112574

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Perfluoroheptanoic acid (PFHpA)	96.1	121	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	111	121	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	100	90.4	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	91.2	89.7	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	92.6	91.2	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	99.5	90.4	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	101	89.8	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	96.1	101	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	99.7	88.9	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	104	88.9	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	95.3	96.7	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	95.9	95.7	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	97.5	95.9	P/P	60 - 160
Perfluorononanoic acid (PFNA)	100	99.5	P/P	60 - 160
Perfluorononanoic acid (PFNA)	72.4	102	P/P	60 - 160
Perfluorononanoic acid (PFNA)	99.5	126	P/P	60 - 160
Perfluorononanoic acid (PFNA)	111	102	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	88.9	90.6	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	90.6	93.9	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	92.0	88.4	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	92.2	88.9	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	90.2	88.4	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	103	98.9	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	104	97.3	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	110	104	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	114	98.9	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	104	89.7	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	90.4	89.8	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	91.5	90.4	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	105	92.1	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	94.9	105	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	98.5	107	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	136	138	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	138	151	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	145	155	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	106	155	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	117	116	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	136	153	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	140	136	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	110	116	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	116	147	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	140	126	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	148	140	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	102	147	P/P	60 - 160

Reference Method: EPA 8260D

Run ID: A93744

Included Lab Sample IDs: 2112584

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 8260D
Run ID: A93744
Included Lab Sample IDs: 2112584

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
1,1-Dichloroethane	100		P	80 - 120
1,1-Dichloroethene	101		P	80 - 120
1,1,1-Trichloroethane	98.8		P	80 - 120
1,1,2-Trichloroethane	103		P	80 - 120
1,1,2,2-Tetrachloroethane	98.0		P	80 - 120
1,2-Dichlorobenzene	99.6		P	80 - 120
1,2-Dichloroethane	106		P	80 - 120
1,2-Dichloropropane	99.6		P	80 - 120
1,3-Dichlorobenzene	97.8		P	80 - 120
1,4-Dichlorobenzene	98.7		P	80 - 120
2-Butanone	96.5		P	70 - 120
Benzene	102		P	80 - 120
Bromodichloromethane	99.2		P	80 - 120
Bromoform	95.8		P	80 - 120
Bromomethane	96.0		P	70 - 130
Carbon tetrachloride	102		P	80 - 120
Chlorobenzene	103		P	80 - 120
Chloroethane	107		P	70 - 130
Chloroform	102		P	80 - 120
Chloromethane	102		P	70 - 130
cis-1,2-Dichloroethene	99.9		P	80 - 120
cis-1,3-Dichloropropene	93.2		P	80 - 120
Dibromochloromethane	97.7		P	80 - 120
Ethylbenzene	103		P	80 - 120
m,p-Xylene	104		P	80 - 120
Methyl-t-butyl ether	93.3		P	80 - 120
Methylene chloride	102		P	80 - 120
o-Xylene	104		P	80 - 120
Tetrachloroethene	103		P	80 - 120
Toluene	102		P	80 - 120
trans-1,2-Dichloroethene	101		P	80 - 120
trans-1,3-Dichloropropene	92.8		P	80 - 120
Trichloroethene	102		P	80 - 120
Trichlorofluoromethane	109		P	70 - 130
Vinyl chloride	101		P	70 - 130

Reference Method: EPA 8321B
Run ID: A93769
Included Lab Sample IDs: 2112543, 2112544, 2112578, 2112579, 2112580, 2112581, 2112582, 2112583

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	103	106	P/P	60 - 160
4:2 Fluorotelomer sulfonate (4:2 FTS)	104	106	P/P	60 - 160
4:2 Fluorotelomer sulfonate (4:2 FTS)	106	103	P/P	60 - 160
4:2 Fluorotelomer sulfonate (4:2 FTS)	107	112	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	96.4	107	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	97.6	100	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	98.8	103	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	100	120	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	102	100	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	102	102	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A93769

Included Lab Sample IDs: 2112543, 2112544, 2112578, 2112579, 2112580, 2112581, 2112582, 2112583

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
8:2 Fluorotelomer sulfonate (8:2 FTS)	108	107	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	120	108	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	113	125	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	113	112	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	113	113	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	114	113	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	113	114	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	113	116	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	115	119	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	116	115	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	109	106	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	110	110	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	112	109	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	113	112	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	104	105	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	105	94.8	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	105	106	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	107	104	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	100	85.1	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	103	100	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	104	92.7	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	85.1	106	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	76.7	97.7	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	90.8	76.7	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	91.3	92.1	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	97.7	80.7	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	103	103	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	104	103	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	107	105	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	107	104	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	107	96.0	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	108	85.5	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	88.8	108	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	95.7	88.8	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	96.0	95.7	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	100	98.9	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	101	102	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	103	104	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	104	100	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	101	86.3	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	86.3	89.4	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	89.4	80.2	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	92.4	101	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	98.9	92.4	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	106	107	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	107	105	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	107	107	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	108	107	P/P	60 - 160
Perfluorononanoic acid (PFNA)	109	110	P/P	60 - 160
Perfluorononanoic acid (PFNA)	109	107	P/P	60 - 160
Perfluorononanoic acid (PFNA)	94.2	109	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A93769

Included Lab Sample IDs: 2112543, 2112544, 2112578, 2112579, 2112580, 2112581, 2112582, 2112583

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Perfluorononanoic acid (PFNA)	99.5	94.2	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	100	103	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	101	102	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	102	97.4	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	97.4	101	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	101	112	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	105	91.3	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	112	90.1	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	91.3	93.7	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	93.7	101	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	107	108	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	108	110	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	108	106	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	111	107	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	71.8	76.2	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	76.2	84.8	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	82.2	76.3	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	84.8	82.2	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	86.9	71.8	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	100	78.9	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	110	95.6	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	78.9	97.8	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	97.8	106	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	110	115	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	84.5	99.7	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	99.6	84.5	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	99.7	101	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	102	98.6	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	96.3	102	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	98.6	99.2	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	99.2	111	P/P	60 - 160

Reference Method: EPA 8270D

Run ID: A93780

Included Lab Sample IDs: 2112575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
1-Naphthylamine	130		P	60 - 130
2-Acetylaminofluorene	95.7		P	70 - 150
2-Methyl-4,6-dinitrophenol	72.0		P	70 - 130
2-Naphthylamine	90.4		P	60 - 130
2-Picoline	107		P	70 - 130
2,4-Dinitrophenol	78.0		P	70 - 130
3,3'-Dichlorobenzidine	104		P	50 - 130
4-Aminobiphenyl	90.2		P	70 - 130
4-Nitrophenol	95.9		P	70 - 130
Aniline	89.5		P	70 - 130
Benzidine	17.0*		F	50 - 130
Bis(2-ethylhexyl)phthalate	105		P	70 - 130
Butyl benzyl phthalate	106		P	70 - 130
Di-n-butyl phthalate	105		P	70 - 130

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
Run ID: A93780
Included Lab Sample IDs: 2112575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Diethyl phthalate	92.2		P	70 - 130
Dinoseb	72.4		P	70 - 130
Ethyl methanesulfonate	86.3		P	70 - 130
N-Nitrosodiethylamine	100		P	70 - 130
N-Nitrosodimethylamine	105		P	70 - 130
N-Nitrosomethylethylamine	111		P	70 - 130
Pentachlorophenol	84.2		P	70 - 130
Pyridine	109		P	70 - 130

Reference Method: EPA 8270D
Run ID: A93787
Included Lab Sample IDs: 2112575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
1-Methylnaphthalene	97.0		P	70 - 130
1,2,4-Trichlorobenzene	99.3		P	70 - 130
1,2,4,5-Tetrachlorobenzene	105		P	70 - 130
1,3-Dinitrobenzene	127		P	70 - 130
1,3,5-Trinitrobenzene	101		P	70 - 130
2-Chloronaphthalene	99.1		P	70 - 130
2-Chlorophenol	104		P	70 - 130
2-Methylnaphthalene	99.8		P	70 - 130
2-Nitroaniline	93.7		P	70 - 130
2-Nitrophenol	82.7		P	70 - 130
2,3,4,6-Tetrachlorophenol	79.2		P	70 - 130
2,4-Dichlorophenol	95.3		P	70 - 130
2,4-Dimethylphenol	100		P	70 - 130
2,4-Dinitrotoluene	93.3		P	70 - 130
2,4,5-Trichlorophenol	87.6		P	70 - 130
2,4,6-Trichlorophenol	84.8		P	70 - 130
2,6-Dichlorophenol	103		P	70 - 130
2,6-Dinitrotoluene	101		P	70 - 130
3-Methylcholanthrene	100		P	70 - 130
4-Bromophenyl phenyl ether	110		P	70 - 130
4-Chloro-3-methylphenol	94.5		P	70 - 130
4-Chlorophenyl phenyl ether	105		P	70 - 130
5-Nitro-o-toluidine	122		P	70 - 130
7,12-Dimethylbenz(a)anthracene	96.3		P	70 - 130
Acenaphthene	97.9		P	70 - 130
Acenaphthylene	106		P	70 - 130
Acetophenone	112		P	70 - 130
Anthracene	106		P	70 - 130
Azobenzene/1,2-Diphenylhydrazine	90.3		P	70 - 130
Benzo(a)anthracene	98.0		P	70 - 130
Benzo(a)pyrene	87.9		P	70 - 130
Benzo(b)fluoranthene	97.6		P	70 - 130
Benzo(g,h,i)perylene	80.1		P	70 - 130
Benzo(k)fluoranthene	96.3		P	70 - 130
Benzyl alcohol	101		P	70 - 130
Bis(2-chloroethoxy)methane	110		P	70 - 130
Bis(2-chloroethyl)ether	101		P	70 - 130

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
Run ID: A93787
Included Lab Sample IDs: 2112575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bis(2-chloroisopropyl)ether	110		P	70 - 130
Carbazole	111		P	70 - 130
Chrysene	95.2		P	70 - 130
Di-n-octyl phthalate	96.2		P	70 - 130
Dibenzo(a,h)anthracene	70.4		P	70 - 130
Dibenzofuran	98.2		P	70 - 130
Dimethyl phthalate	96.2		P	70 - 130
Dimethylaminoazobenzene	110		P	70 - 130
Fluoranthene	104		P	70 - 130
Fluorene	103		P	70 - 130
Hexachlorobenzene	97.3		P	70 - 130
Hexachlorobutadiene	98.6		P	70 - 130
Hexachlorocyclopentadiene	72.6		P	70 - 130
Hexachloroethane	97.0		P	70 - 130
Hexachloropropene	108		P	70 - 130
Indeno(1,2,3-cd)pyrene	76.7		P	70 - 130
Isophorone	97.2		P	70 - 130
Isosafrole	118		P	70 - 130
m,p-Cresols	93.3		P	70 - 130
N-Nitrosodi-n-butylamine	120		P	70 - 130
N-Nitrosodi-n-propylamine	112		P	70 - 130
N-Nitrosodiphenylamine/ Diphenylamine	106		P	70 - 130
N-Nitrosomorpholine	107		P	70 - 130
N-Nitrosopiperidine	114		P	70 - 130
N-Nitrosopyrrolidine	123		P	70 - 130
Naphthalene	96.0		P	70 - 130
Nitrobenzene	97.7		P	70 - 130
o-Cresol	94.8		P	70 - 130
o-Toluidine	111		P	70 - 130
Pentachlorobenzene	100		P	70 - 130
Pentachloroethane	104		P	70 - 130
Pentachloronitrobenzene	107		P	70 - 130
Phenacetin	106		P	70 - 130
Phenanthrene	93.5		P	70 - 130
Phenol	113		P	70 - 130
Pyrene	92.1		P	70 - 130
Safrole	117		P	70 - 130

Reference Method: EPA 8321B
Run ID: A93868
Included Lab Sample IDs: 2112545, 2112546, 2112547

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	103	102	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	101	108	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	102	104	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	98.9	106	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	103	109	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	102	105	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	99.9	102	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	98.2	102	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A93868

Included Lab Sample IDs: 2112545, 2112546, 2112547

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Perfluorododecanoic acid (PFDoA)	93.3	104	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	101	102	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	93.3	93.4	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	103	106	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	92.8	87.3	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	98.7	102	P/P	60 - 160
Perfluorononanoic acid (PFNA)	73.0	78.1	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	99.5	101	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	86.7	110	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	103	106	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	82.0	93.2	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	85.4	79.4	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	89.0	76.9	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	86.7	88.7	P/P	60 - 160

Reference Method: EPA 6020A

Run ID: A93990

Included Lab Sample IDs: 2112577

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	99.1	101	P/P	90 - 110
Barium	99.1	98.2	P/P	90 - 110
Cadmium	97.3	96.8	P/P	90 - 110
Chromium	97.6	100	P/P	90 - 110
Lead	97.8	97.7	P/P	90 - 110
Selenium	98.7	97.8	P/P	90 - 110

Reference Method: EPA 6020A

Run ID: A94047

Included Lab Sample IDs: 2112577

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	99.7	99.9	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
 Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
 Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			Precision
				LCS	SMP	MS	
EPA 6020A	Arsenic	102		102	101	101	0.231
	Barium	99.8		103	98.9	100	0.917
	Cadmium	99.3		99.0	98.0	99.1	1.07
	Chromium	96.5		99.0	98.4	99.9	1.51
	Lead	96.6		99.1	97.9	98.7	0.773
	Selenium	103		100	99.0	100	1.01
	Silver	98.6		99.2	97.6	99.2	1.66
EPA 7473	Mercury	101		101	101		0.834
EPA 8260D	1,1-Dichloroethane	104	99.2	99.8	99.4	4.87	0.351
	1,1-Dichloroethene	108	103	102	102	4.47	0.0489
	1,1,1-Trichloroethane	100	95.8	95.8	95.6	4.49	0.209
	1,1,2-Trichloroethane	105	101	101	102	4.01	0.986
	1,1,2,2-Tetrachloroethane	109	112	115	117	3.53	1.77
	1,2-Dichlorobenzene	101	98.0	99.2	99.8	2.82	0.603
	1,2-Dichloroethane	111	105	105	105	5.29	0.0475
	1,2-Dichloropropane	106	101	101	101	4.70	0.247
	1,3-Dichlorobenzene	99.0	96.3	97.4	98.4	2.76	1.12
	1,4-Dichlorobenzene	99.8	97.2	98.1	98.6	2.59	0.559
	2-Butanone	96.4	91.6	90.8	93.7	5.05	3.18
	Benzene	107	103	103	103	4.47	0.341
	Bromodichloromethane	107	102	102	102	5.31	0.246
	Bromoform	102	96.4	96.8	97.0	5.94	0.310
	Bromomethane	107	102	100	102	5.17	2.02
	Carbon tetrachloride	104	99.1	99.4	98.8	5.07	0.656
	Chlorobenzene	109	104	105	105	4.22	0.191
	Chloroethane	109	105	106	104	3.97	1.72
	Chloroform	113	108	108	107	4.75	0.551
	Chloromethane	104	97.4	98.0	99.1	6.17	1.07
	cis-1,2-Dichloroethene	106	102	101	102	3.91	0.0985
	cis-1,3-Dichloropropene	101	98.0	98.6	98.8	3.06	0.253
	Dibromochloromethane	108	103	103	104	4.92	1.21
	Ethylbenzene	109	105	105	106	3.92	0.237
	m,p-Xylene	110	107	107	107	3.34	0.373
	Methyl-t-butyl ether	96.0	91.6	91.3	92.0	4.80	0.709
	Methylene chloride	110	105	100	100	4.61	0.250
	o-Xylene	110	106	107	107	3.51	0.748
	Tetrachloroethene	110	106	106	105	2.96	0.991
	Toluene	108	104	104	104	4.24	0.529
	trans-1,2-Dichloroethene	110	105	105	105	4.48	0.286
	trans-1,3-Dichloropropene	101	98.2	98.4	98.9	2.66	0.558
Trichloroethene	113	103	101	100	9.43	0.894	
Trichlorofluoromethane	110	105	105	104	4.78	1.25	
Vinyl chloride	98.8	93.4	93.3	93.4	5.57	0.161	
EPA 8270D	1-Methylnaphthalene	74.8	78.5	70.3	66.5	4.83	5.86
	1-Naphthylamine	29.7	26.3	8.30	7.60	12.1	
	1,2,4-Trichlorobenzene	75.7	78.5	65.3	58.2	3.63	11.8
	1,2,4,5-Tetrachlorobenzene	81.7	84.5	73.4	66.6	3.37	9.84
	1,3-Dinitrobenzene	94.7	92.4	90.4	82.6	2.40	9.26
	1,3,5-Trinitrobenzene	118	118	56.1	42.6	0.425	27.7
	2-Acetylamino fluorene	88.2	88.0	92.5	91.7	0.227	1.18
	2-Chloronaphthalene	75.1	79.2	70.6	68.3	5.31	3.62
	2-Chlorophenol	80.2	79.8	68.5	67.4	0.500	1.93
	2-Methyl-4,6-dinitrophenol	53.8	57.4	67.7	50.7	6.47	29.0
2-Methylnaphthalene	74.8	76.8	71.1	65.8	2.64	8.05	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision		
						LCS	SMP	MS
EPA 8270D	2-Naphthylamine	39.3	33.7	6.40	8.50	15.3		
	2-Nitroaniline	85.0	87.3	87.9	85.4	2.67		3.15
	2-Nitrophenol	81.7	82.9	74.6	69.5	1.46		7.30
	2-Picoline	71.9	74.0	72.8	69.4	2.88		5.09
	2,3,4,6-Tetrachlorophenol	111	114	127	125	2.27		1.65
	2,4-Dichlorophenol	78.9	78.3	78.8	72.5	0.763		8.63
	2,4-Dimethylphenol	52.2	51.5	81.4	74.9	1.35		8.62
	2,4-Dinitrophenol	36.6	39.0	107	82.7	6.35		25.7
	2,4-Dinitrotoluene	86.4	92.2	86.5	82.9	6.49		4.56
	2,4,5-Trichlorophenol	79.3	81.2	88.6	83.9	2.37		5.76
	2,4,6-Trichlorophenol	79.1	81.6	83.3	82.1	3.11		1.76
	2,6-Dichlorophenol	90.7	88.3	87.9	80.0	2.68		9.72
	2,6-Dinitrotoluene	88.3	89.8	88.9	86.7	1.68		2.81
	3-Methylcholanthrene	73.4	73.1	76.9	75.1	0.410		2.68
	3,3'-Dichlorobenzidine	107	103	5.45	5.95	3.99		
	4-Aminobiphenyl	79.2	81.3	7.90	0.400	2.62		
	4-Bromophenyl phenyl ether	87.2	88.5	83.1	79.3	1.48		4.99
	4-Chloro-3-methylphenol	84.2	86.8	91.0	84.7	3.04		7.48
	4-Chlorophenyl phenyl ether	62.0	65.2	61.6	59.9	5.03		3.11
	4-Nitrophenol	41.3	50.7	53.2	66.2	20.4		21.5
	5-Nitro-o-toluidine	96.2	91.4	73.6	72.9	5.12		1.23
	7,12-Dimethylbenz(a)anthracene	96.6	93.5	68.1	66.8	3.26		2.23
	Acenaphthene	77.4	80.9	74.4	71.6	4.42		4.14
	Acenaphthylene	74.8	78.4	73.5	70.2	4.70		4.90
	Acetophenone	62.6	60.2	54.1	51.0	3.91		6.21
	Aniline	68.5	69.0	64.5	66.4	0.727		2.60
	Anthracene	87.4	86.1	83.1	78.3	1.50		6.25
	Azobenzene/1,2-Diphenylhydrazine	84.8	83.9	73.7	71.4	1.07		3.48
	Benzidine	19.9	15.9	0.0	0.0	22.3		
	Benzo(a)anthracene	91.8	92.0	83.4	79.8	0.218		4.72
	Benzo(a)pyrene	90.1	88.8	75.6	73.4	1.45		3.26
	Benzo(b)fluoranthene	89.4	88.2	77.1	76.4	1.35		1.22
	Benzo(g,h,i)perylene	108	106	74.3	74.0	1.21		0.711
	Benzo(k)fluoranthene	84.5	87.3	70.2	70.5	3.26		0.120
	Benzyl alcohol	74.3	74.2	66.1	68.8	0.135		3.70
	Bis(2-chloroethoxy)methane	81.8	82.7	64.1	56.9	1.09		10.6
	Bis(2-chloroethyl)ether	93.3	92.2	76.5	79.3	1.19		3.29
	Bis(2-chloroisopropyl)ether	78.8	79.1	67.0	63.7	0.380		5.36
	Bis(2-ethylhexyl)phthalate	90.3	89.7	76.4	71.6	0.667		6.79
	Butyl benzyl phthalate	86.4	86.4	84.1	81.5	0.0		3.45
	Carbazole	72.9	67.7	91.9	88.7	7.40		3.85
	Chrysene	86.9	88.6	81.3	79.7	1.94		2.29
	Di-n-butyl phthalate	88.9	88.2	84.3	80.5	0.791		4.92
Di-n-octyl phthalate	85.5	85.2	66.2	63.6	0.351		4.31	
Dibenzo(a,h)anthracene	84.6	83.4	63.3	61.2	1.43		3.68	
Dibenzofuran	79.3	82.5	77.4	74.3	3.96		4.39	
Diethyl phthalate	79.4	82.3	77.2	75.4	3.59		2.67	
Dimethyl phthalate	88.5	92.2	88.3	84.9	4.10		4.23	
Dimethylaminoazobenzene	92.4	92.6	56.3	54.0	0.216		4.48	
Dinoseb	80.6	76.6	124	98.1	5.09		23.8	
Ethyl methanesulfonate	75.1	73.9	62.8	62.5	1.61		0.786	
Fluoranthene	86.9	86.8	82.0	78.3	0.115		4.92	
Fluorene	69.8	73.0	69.6	67.2	4.48		3.82	
Hexachlorobenzene	86.1	86.7	79.4	75.5	0.694		5.34	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision	MS	
							SMP		
EPA 8270D	Hexachlorobutadiene	74.4	76.4	62.3	55.2	2.65		12.4	
	Hexachlorocyclopentadiene	44.6	49.3	15.2	14.3	10.0		6.41	
	Hexachloroethane	77.6	76.1	58.4	55.3	1.95		5.76	
	Hexachloropropene	74.6	73.7	53.4	49.2	1.21		8.49	
	Indeno(1,2,3-cd)pyrene	78.7	76.8	57.1	55.9	2.44		2.43	
	Isophorone	81.2	82.8	74.7	68.7	1.95		8.67	
	Isosafrole	85.1	85.1	79.5	72.6	0.0		9.38	
	m,p-Cresols	80.2	82.2	70.8	74.8	2.34		5.12	
	N-Nitrosodi-n-butylamine	98.2	94.4	93.5	87.8	3.95		6.59	
	N-Nitrosodi-n-propylamine	79.5	78.7	66.5	67.8	1.01		1.63	
	N-Nitrosodiethylamine	83.3	78.4	73.2	68.0	6.06		7.67	
	N-Nitrosodimethylamine	62.7	64.0	51.7	51.2	2.05		1.28	
	N-Nitrosodiphenylamine/ Diphenylamine	69.8	70.3	68.2	66.1	0.714		3.43	
	N-Nitrosomethylethylamine	86.6	77.8	71.0	67.4	10.7		5.51	
	N-Nitrosomorpholine	76.0	74.0	67.1	64.4	2.67		4.41	
	N-Nitrosopiperidine	87.9	85.5	80.6	77.6	2.77		4.10	
	N-Nitrosopyrrolidine	56.8	54.3	47.6	44.7	4.50		6.59	
	Naphthalene	74.7	76.0	65.4	58.9	1.73		10.8	
	Nitrobenzene	81.5	84.3	74.1	65.0	3.38		13.4	
	o-Cresol	71.9	75.3	70.0	71.4	4.62		1.67	
	o-Toluidine	84.1	80.1	69.4	68.3	4.87		1.90	
	Pentachlorobenzene	90.4	89.7	84.2	79.4	0.777		6.17	
	Pentachloroethane	88.3	83.0	69.9	60.6	6.19		14.6	
	Pentachloronitrobenzene	103	99.1	91.4	89.8	4.05		2.07	
	Pentachlorophenol	58.7	62.5	101	97.7	6.27		3.73	
	Phenacetin	95.8	95.4	95.2	91.4	0.418		4.38	
	Phenanthrene	89.1	89.1	83.5	79.8	0.0		4.84	
	Phenol	42.1	54.7	55.0	54.1	26.0		1.96	
	Pyrene	84.6	85.3	81.9	78.3	0.824		4.80	
	Pyridine	49.3	46.3	53.9	50.8	6.28		6.23	
	Safrole	85.1	85.1	79.5	72.6	0.0		9.38	
	EPA 8321B	4:2 Fluorotelomer sulfonate (4:2 FTS)	81.1		102	89.5			13.2
		4:2 Fluorotelomer sulfonate (4:2 FTS)	77.3		85.9	90.8			5.50
4:2 Fluorotelomer sulfonate (4:2 FTS)		108	109			1.52			
4:2 Fluorotelomer sulfonate (4:2 FTS)		105	94.2			10.4			
6:2 Fluorotelomer sulfonate (6:2 FTS)		85.4		163	120			18.6	
6:2 Fluorotelomer sulfonate (6:2 FTS)		88.7		129	136			5.48	
6:2 Fluorotelomer sulfonate (6:2 FTS)		105	115			8.94			
6:2 Fluorotelomer sulfonate (6:2 FTS)		121	104			15.2			
8:2 Fluorotelomer sulfonate (8:2 FTS)		107		167	153			7.13	
8:2 Fluorotelomer sulfonate (8:2 FTS)		116		176	186			5.74	
8:2 Fluorotelomer sulfonate (8:2 FTS)		107	114			6.22			
8:2 Fluorotelomer sulfonate (8:2 FTS)		115	98.8			15.5			

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision	MS
							SMP	
EPA 8321B	N-Et perfluorooctanesulfonamidoAc acid	86.7		45.3	42.9			5.41
	N-Et perfluorooctanesulfonamidoAc acid	88.2		71.8	74.2			3.28
	N-Et perfluorooctanesulfonamidoAc acid	95.0		86.2	88.2			2.26
	N-Et perfluorooctanesulfonamidoAc acid	73.3	78.7				7.10	
	N-Et perfluorooctanesulfonamidoAc acid	77.9	66.2				16.2	
	N-Me perfluorooctanesulfonamidoAc acid	90.3		45.7	41.1			10.7
	N-Me perfluorooctanesulfonamidoAc acid	88.6		69.1	67.4			2.49
	N-Me perfluorooctanesulfonamidoAc acid	94.7		78.0	81.7			4.65
	N-Me perfluorooctanesulfonamidoAc acid	85.8	84.8				1.22	
	N-Me perfluorooctanesulfonamidoAc acid	84.9	77.0				9.73	
	Perfluorobutanesulfonic acid (PFBS)	105						2.17
	Perfluorobutanesulfonic acid (PFBS)	94.7		77.5	75.9			2.15
	Perfluorobutanesulfonic acid (PFBS)	74.1		68.5	69.5			1.41
	Perfluorobutanesulfonic acid (PFBS)	102	103				0.584	
	Perfluorobutanesulfonic acid (PFBS)	89.9	81.6				9.71	
	Perfluorodecanesulfonic acid (PFDS)	97.5		104	98.4			5.85
	Perfluorodecanesulfonic acid (PFDS)	93.6		98.2	96.2			2.06
	Perfluorodecanesulfonic acid (PFDS)	72.7	82.4				12.5	
	Perfluorodecanesulfonic acid (PFDS)	71.3	69.7				2.25	
	Perfluorodecanoic acid (PFDA)	82.5		74.8	93.0			21.7
	Perfluorodecanoic acid (PFDA)	82.9		90.9	80.7			11.9
	Perfluorodecanoic acid (PFDA)	99.3		97.8	112			13.8
	Perfluorodecanoic acid (PFDA)	70.1	69.0				1.56	
	Perfluorodecanoic acid (PFDA)	78.2	68.0				14.0	
	Perfluorododecanoic acid (PFDoA)	86.3		122	106			13.6
	Perfluorododecanoic acid (PFDoA)	105		110	106			3.80
	Perfluorododecanoic acid (PFDoA)	108		131	138			4.69
	Perfluorododecanoic acid (PFDoA)	62.2	72.6				15.5	
	Perfluorododecanoic acid (PFDoA)	65.7	61.2				7.10	
	Perfluoroheptanesulfonic acid (PFHpS)	91.6		86.5	83.5			3.53
	Perfluoroheptanesulfonic acid (PFHpS)	83.0		78.7	81.5			3.46
	Perfluoroheptanesulfonic acid (PFHpS)	97.7	96.5				1.27	
	Perfluoroheptanesulfonic acid (PFHpS)	89.0	80.3				10.3	
Perfluoroheptanoic acid (PFHpA)	94.1						16.1	
Perfluoroheptanoic acid (PFHpA)	90.2		91.4	89.1			2.63	
Perfluoroheptanoic acid (PFHpA)	89.6		97.6	84.8			11.4	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision	
							SMP	MS
EPA 8321B	Perfluoroheptanoic acid (PFHpA)	93.1	91.7			1.44		
	Perfluoroheptanoic acid (PFHpA)	87.9	77.9			12.1		
	Perfluorohexanesulfonic acid (PFHxS)	107						1.06
	Perfluorohexanesulfonic acid (PFHxS)	95.6		88.7	82.7			7.01
	Perfluorohexanesulfonic acid (PFHxS)	86.3		88.7	89.1			0.448
	Perfluorohexanesulfonic acid (PFHxS)	102	101			1.48		
	Perfluorohexanesulfonic acid (PFHxS)	91.6	84.9			7.57		
	Perfluorohexanoic acid (PFHxA)	104						19.6
	Perfluorohexanoic acid (PFHxA)	84.2		71.6	65.1			7.06
	Perfluorohexanoic acid (PFHxA)	86.2		72.3	76.7			4.70
	Perfluorohexanoic acid (PFHxA)	110	97.6			12.0		
	Perfluorohexanoic acid (PFHxA)	76.6	67.3			12.9		
	Perfluorononanesulfonic acid (PFNS)	90.5		90.5	86.4			4.70
	Perfluorononanesulfonic acid (PFNS)	87.3		84.9	85.6			0.825
	Perfluorononanesulfonic acid (PFNS)	81.2	85.2			4.81		
	Perfluorononanesulfonic acid (PFNS)	83.5	79.3			5.10		
	Perfluorononanoic acid (PFNA)	105		150	135			9.68
	Perfluorononanoic acid (PFNA)	89.7		81.7	95.3			15.4
	Perfluorononanoic acid (PFNA)	88.7		88.0	92.4			4.80
	Perfluorononanoic acid (PFNA)	96.8	76.2			23.9		
	Perfluorononanoic acid (PFNA)	87.5	68.9			23.7		
	Perfluorooctanesulfonic acid (PFOS)	90.6						2.73
	Perfluorooctanesulfonic acid (PFOS)	87.6		91.1	79.1			8.86
	Perfluorooctanesulfonic acid (PFOS)	83.6		76.5	82.5			3.42
	Perfluorooctanesulfonic acid (PFOS)	86.7	86.1			0.629		
	Perfluorooctanesulfonic acid (PFOS)	91.6	83.0			9.90		
	Perfluorooctanoic acid (PFOA)	105						26.4
	Perfluorooctanoic acid (PFOA)	91.9		91.9	83.1			10.1
	Perfluorooctanoic acid (PFOA)	97.9		86.9	85.4			1.47
	Perfluorooctanoic acid (PFOA)	91.6	86.6			5.72		
	Perfluorooctanoic acid (PFOA)	82.6	70.9			15.2		
	Perfluoropentanesulfonic acid (PFPeS)	99.0		85.4	83.6			2.16
	Perfluoropentanesulfonic acid (PFPeS)	85.2		77.6	82.8			6.46
Perfluoropentanesulfonic acid (PFPeS)	112	105			6.09			
Perfluoropentanesulfonic acid (PFPeS)	90.9	83.8			8.14			
Perfluoropentanoic acid (PFPeA)	85.6		77.0	79.0			2.50	
Perfluoropentanoic acid (PFPeA)	88.2		82.0	82.0			0.0696	
Perfluoropentanoic acid (PFPeA)	77.0	58.1			27.9			
Perfluoropentanoic acid (PFPeA)	55.3	47.0			16.4			

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision	
							SMP	MS
EPA 8321B	Perfluorotetradecanoic acid (PFTeA)	94.2		143	178			21.8
	Perfluorotetradecanoic acid (PFTeA)	110		124	121			2.68
	Perfluorotetradecanoic acid (PFTeA)	148		139	132			5.05
	Perfluorotetradecanoic acid (PFTeA)	45.9	46.6			1.38		
	Perfluorotetradecanoic acid (PFTeA)	59.0	49.4			17.6		
	Perfluorotridecanoic acid (PFTriA)	80.3		140	140			0.518
	Perfluorotridecanoic acid (PFTriA)	96.2		114	116			1.63
	Perfluorotridecanoic acid (PFTriA)	116		111	106			4.23
	Perfluorotridecanoic acid (PFTriA)	46.0	53.3			14.7		
	Perfluorotridecanoic acid (PFTriA)	58.4	53.5			8.66		
	Perfluoroundecanoic acid (PFUnA)	79.8		138	109			23.7
	Perfluoroundecanoic acid (PFUnA)	104		100	120			17.5
	Perfluoroundecanoic acid (PFUnA)	132		124	128			3.14
	Perfluoroundecanoic acid (PFUnA)	81.0	77.4			4.52		
	Perfluoroundecanoic acid (PFUnA)	77.3	59.3			26.3		

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 6020A / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting RCRA Projects	2112577
EPA 7473 / E31780	Mercury in aqueous samples using thermal decomposition, amalgamation, and AA spectroscopy.	2112576
EPA 8260D / E31780	Volatile organic pollutants in acid preserved water matrices using GC/MS	2112584
EPA 8270D / E31780	EPA Method 8270, Semi-volatile organic pollutants including PAHs, excluding PCBs and Toxaphene, in water matrices by GC/MS.	2112575
EPA 8321B / E31780	Perfluorinated alkyl substances in sediment/solid matrices by HPLC/MS/MS	2112528, 2112529, 2112530, 2112531, 2112532, 2112533, 2112534, 2112535, 2112536, 2112537, 2112538, 2112539, 2112540, 2112541, 2112568, 2112569, 2112570, 2112571, 2112572, 2112573, 2112574
EPA 8321B / E31780	Perfluorinated alkyl substances in solid and liquid waste matrices by HPLC/MS/MS	2112542
EPA 8321B / E31780	Perfluorinated alkyl substances in water matrices by HPLC/MS/MS	2112543, 2112544, 2112545, 2112546, 2112547, 2112578, 2112579, 2112580, 2112581, 2112582, 2112583
SM 2540 G (20th)	Percent solid determination before the other sample preparations.	2112548, 2112549, 2112550, 2112551, 2112552, 2112553, 2112554, 2112555, 2112556, 2112557, 2112558, 2112559, 2112560, 2112561, 2112588, 2112589, 2112590, 2112591, 2112592, 2112593, 2112594

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 6020A	08/16/2019	08/20/2019 16:10	Elliott D. Healy	09/04/2019 23:39	Robert K Palmer	2112577
	08/16/2019	08/20/2019 16:10	Elliott D. Healy	09/07/2019 01:52	Robert K Palmer	2112577
EPA 7473	08/16/2019			08/19/2019 12:44	Vijayalakshmi Reddy	2112576
EPA 8260D	08/16/2019	08/22/2019 14:00	Yi Lin Luo	08/23/2019 00:25	Yi Lin Luo	2112584
EPA 8270D	08/16/2019	08/19/2019 09:00	Rasheda Ghaffari	08/22/2019 12:26	Mohammad Ghaffari	2112575
	08/16/2019	08/19/2019 09:00	Rasheda Ghaffari	08/22/2019 15:01	Mohammad Ghaffari	2112575
EPA 8321B	08/16/2019	08/19/2019 12:00	Mohammad Ghaffari	08/22/2019 11:11	Mohammad Ghaffari	2112528
	08/16/2019	08/19/2019 12:00	Mohammad Ghaffari	08/22/2019 11:31	Mohammad Ghaffari	2112529
	08/16/2019	08/19/2019 12:00	Mohammad Ghaffari	08/22/2019 11:50	Mohammad Ghaffari	2112530
	08/16/2019	08/19/2019 12:00	Mohammad Ghaffari	08/22/2019 12:10	Mohammad Ghaffari	2112531
	08/16/2019	08/19/2019 12:00	Mohammad Ghaffari	08/22/2019 12:29	Mohammad Ghaffari	2112532
	08/16/2019	08/19/2019 12:00	Mohammad Ghaffari	08/22/2019 12:49	Mohammad Ghaffari	2112533
	08/16/2019	08/19/2019 12:00	Mohammad Ghaffari	08/22/2019 13:08	Mohammad Ghaffari	2112534
	08/16/2019	08/19/2019 12:00	Mohammad Ghaffari	08/22/2019 13:28	Mohammad Ghaffari	2112535
	08/16/2019	08/19/2019 12:00	Mohammad Ghaffari	08/22/2019 22:55	Mohammad Ghaffari	2112528
	08/16/2019	08/19/2019 12:00	Mohammad Ghaffari	08/22/2019 23:14	Mohammad Ghaffari	2112529
	08/16/2019	08/19/2019 12:00	Mohammad Ghaffari	08/22/2019 23:53	Mohammad Ghaffari	2112530
	08/16/2019	08/19/2019 12:00	Mohammad Ghaffari	08/23/2019 00:13	Mohammad Ghaffari	2112531
	08/16/2019	08/19/2019 12:00	Mohammad Ghaffari	08/23/2019 00:32	Mohammad Ghaffari	2112531
	08/16/2019	08/19/2019 12:00	Mohammad Ghaffari	08/23/2019 00:52	Mohammad Ghaffari	2112532
	08/16/2019	08/19/2019 12:00	Mohammad Ghaffari	08/23/2019 01:11	Mohammad Ghaffari	2112532
	08/16/2019	08/19/2019 12:00	Mohammad Ghaffari	08/23/2019 01:31	Mohammad Ghaffari	2112533
	08/16/2019	08/19/2019 14:00	Mohammad Ghaffari	08/23/2019 03:47	Mohammad Ghaffari	2112536
	08/16/2019	08/19/2019 14:00	Mohammad Ghaffari	08/23/2019 04:07	Mohammad Ghaffari	2112537
	08/16/2019	08/19/2019 14:00	Mohammad Ghaffari	08/23/2019 04:26	Mohammad Ghaffari	2112538
	08/16/2019	08/19/2019 14:00	Mohammad Ghaffari	08/23/2019 04:46	Mohammad Ghaffari	2112539
08/16/2019	08/19/2019 14:00	Mohammad Ghaffari	08/23/2019 05:05	Mohammad Ghaffari	2112540	
08/16/2019	08/19/2019 14:00	Mohammad Ghaffari	08/23/2019 05:45	Mohammad Ghaffari	2112541	
08/16/2019	08/19/2019 14:00	Mohammad Ghaffari	08/23/2019 06:04	Mohammad Ghaffari	2112568	
08/16/2019	08/19/2019 14:00	Mohammad Ghaffari	08/23/2019 06:24	Mohammad Ghaffari	2112569	
08/16/2019	08/19/2019 14:00	Mohammad Ghaffari	08/23/2019 06:43	Mohammad Ghaffari	2112570	
08/16/2019	08/19/2019 14:00	Mohammad Ghaffari	08/23/2019 07:03	Mohammad Ghaffari	2112571	
08/16/2019	08/19/2019 14:00	Mohammad Ghaffari	08/23/2019 07:22	Mohammad Ghaffari	2112572	
08/16/2019	08/19/2019 14:00	Mohammad Ghaffari	08/23/2019 07:42	Mohammad Ghaffari	2112573	
08/16/2019	08/19/2019 14:00	Mohammad Ghaffari	08/23/2019 08:01	Mohammad Ghaffari	2112574	
08/16/2019	08/19/2019 14:00	Mohammad Ghaffari	08/23/2019 08:40	Mohammad Ghaffari	2112540	
08/16/2019	08/19/2019 14:00	Mohammad Ghaffari	08/23/2019 09:00	Mohammad Ghaffari	2112570	
08/16/2019	08/19/2019 14:00	Mohammad Ghaffari	08/23/2019 09:19	Mohammad Ghaffari	2112573	
08/16/2019	08/21/2019 10:00	Rasheda Ghaffari	08/23/2019 16:32	Mohammad Ghaffari	2112582	
08/16/2019	08/21/2019 10:00	Rasheda Ghaffari	08/23/2019 18:29	Mohammad Ghaffari	2112543	

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	08/16/2019	08/21/2019 10:00	Rasheda Ghaffari	08/23/2019 18:49	Mohammad Ghaffari	2112544
	08/16/2019	08/21/2019 10:00	Rasheda Ghaffari	08/23/2019 19:08	Mohammad Ghaffari	2112578
	08/16/2019	08/21/2019 10:00	Rasheda Ghaffari	08/23/2019 19:28	Mohammad Ghaffari	2112579
	08/16/2019	08/21/2019 10:00	Rasheda Ghaffari	08/23/2019 20:27	Mohammad Ghaffari	2112580
	08/16/2019	08/21/2019 10:00	Rasheda Ghaffari	08/23/2019 20:46	Mohammad Ghaffari	2112581
	08/16/2019	08/21/2019 10:00	Rasheda Ghaffari	08/23/2019 22:43	Mohammad Ghaffari	2112543
	08/16/2019	08/21/2019 10:00	Rasheda Ghaffari	08/23/2019 23:03	Mohammad Ghaffari	2112544
	08/16/2019	08/21/2019 10:00	Rasheda Ghaffari	08/25/2019 11:47	Mohammad Ghaffari	2112581
	08/16/2019	08/21/2019 10:00	Rasheda Ghaffari	08/25/2019 12:07	Mohammad Ghaffari	2112583
	08/16/2019	08/21/2019 10:00	Rasheda Ghaffari	08/25/2019 12:26	Mohammad Ghaffari	2112578
	08/16/2019	08/21/2019 10:00	Rasheda Ghaffari	08/25/2019 12:46	Mohammad Ghaffari	2112579
	08/16/2019	08/21/2019 10:00	Rasheda Ghaffari	08/25/2019 13:05	Mohammad Ghaffari	2112543
	08/16/2019	08/21/2019 10:00	Rasheda Ghaffari	08/25/2019 13:25	Mohammad Ghaffari	2112544
	08/16/2019	08/21/2019 10:00	Rasheda Ghaffari	08/25/2019 13:44	Mohammad Ghaffari	2112581
	08/16/2019	08/21/2019 10:00	Rasheda Ghaffari	08/25/2019 14:04	Mohammad Ghaffari	2112583
	08/16/2019	08/22/2019 12:30	Mohammad Ghaffari	08/22/2019 15:45	Mohammad Ghaffari	2112542
	08/16/2019	08/22/2019 12:30	Mohammad Ghaffari	08/22/2019 16:04	Mohammad Ghaffari	2112542
	08/16/2019	08/22/2019 12:30	Mohammad Ghaffari	08/22/2019 16:24	Mohammad Ghaffari	2112542
	08/16/2019	08/28/2019 10:00	Rasheda Ghaffari	08/29/2019 04:38	Mohammad Ghaffari	2112545
	08/16/2019	08/28/2019 10:00	Rasheda Ghaffari	08/29/2019 04:57	Mohammad Ghaffari	2112546
	08/16/2019	08/28/2019 10:00	Rasheda Ghaffari	08/29/2019 05:17	Mohammad Ghaffari	2112547

Chemical Analysis Report

SIS-2020-02-07-02

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

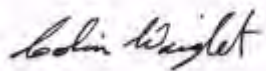
Event Description: **Palm Beach State College (Soil)**
Request ID: **RQ-2020-02-03-24**
Customer: **SIS**
Project ID: **SIS-PFAS**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Road
Twin Towers Bldg. MS# 4515
Tallahassee, FL 32399
Attn: Jeff Newton

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 09-MAR-2020 12:39



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 10:51

Field ID: SB-14 (4-5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155846	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P378518	
		Perfluorodecanoic acid (PFDA)**	0.12	UJ	ug/Kg	P378518	MS
		Perfluorododecanoic acid (PFDoA)**	0.25	U	ug/Kg	P378518	
		Perfluoroheptanoic acid (PFHpA)**	0.21	I	ug/Kg	P378518	
		Perfluorohexanesulfonic acid (PFHxS)**	0.80		ug/Kg	P378518	
		Perfluorohexanoic acid (PFHxA)**	0.30	I	ug/Kg	P378518	
		Perfluorononanoic acid (PFNA)**	0.27	I J	ug/Kg	P378518	MS, RPD
		Perfluorooctanesulfonic acid (PFOS)**	14		ug/Kg	P378518	
		Perfluorooctanoic acid (PFOA)**	0.22	I	ug/Kg	P378518	
		Perfluorotetradecanoic acid (PFTeA)**	0.12	U	ug/Kg	P378518	
		Perfluorotridecanoic acid (PFTriA)**	0.12	U	ug/Kg	P378518	
		Perfluoroundecanoic acid (PFUnA)**	0.12	UJ	ug/Kg	P378518	RPD
		N-Me perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378518	
		N-Et perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378518	
		Perfluoropentanoic acid (PFPeA)**	0.52	I	ug/Kg	P378518	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.25	U	ug/Kg	P378518	
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	U	ug/Kg	P378518	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.49	U	ug/Kg	P378518	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.25	U	ug/Kg	P378518	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P378518	
		Perfluorononanesulfonic acid (PFNS)**	0.12	U	ug/Kg	P378518	
		Perfluorodecanesulfonic acid (PFDS)**	0.12	U	ug/Kg	P378518	
2155866	SM 2540 G (20th)	% Solid**	86.0		%	P378855	

Ref. Method and Comment:

EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 11:20

Field ID: SB-15 (0-0.5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155847	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.10	U	ug/Kg	P378518	
		Perfluorodecanoic acid (PFDA)**	0.10	U	ug/Kg	P378518	MS
		Perfluorododecanoic acid (PFDoA)**	0.10	U	ug/Kg	P378518	
		Perfluoroheptanoic acid (PFHpA)**	0.18	I	ug/Kg	P378518	
		Perfluorohexanesulfonic acid (PFHxS)**	0.10	U	ug/Kg	P378518	
		Perfluorohexanoic acid (PFHxA)**	0.10	U	ug/Kg	P378518	
		Perfluorononanoic acid (PFNA)**	0.16	I	ug/Kg	P378518	MS, RPD
		Perfluorooctanesulfonic acid (PFOS)**	0.83	I	ug/Kg	P378518	
		Perfluorooctanoic acid (PFOA)**	0.10	U	ug/Kg	P378518	
		Perfluorotetradecanoic acid (PFTeA)**	0.10	U	ug/Kg	P378518	
		Perfluorotridecanoic acid (PFTriA)**	0.10	U	ug/Kg	P378518	
		Perfluoroundecanoic acid (PFUnA)**	0.10	U	ug/Kg	P378518	RPD
		N-Me perfluorooctanesulfonamidoAc acid**	0.10	U	ug/Kg	P378518	
		N-Et perfluorooctanesulfonamidoAc acid**	0.10	U	ug/Kg	P378518	
		Perfluoropentanoic acid (PFPeA)**	0.42	U	ug/Kg	P378518	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.21	U	ug/Kg	P378518	
		Perfluoropentanesulfonic acid (PFPeS)**	0.10	U	ug/Kg	P378518	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.42	U	ug/Kg	P378518	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.21	U	ug/Kg	P378518	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.10	U	ug/Kg	P378518	
		Perfluorononanesulfonic acid (PFNS)**	0.10	U	ug/Kg	P378518	
		Perfluorodecanesulfonic acid (PFDS)**	0.10	U	ug/Kg	P378518	
2155867	SM 2540 G (20th)	% Solid**	96.8		%	P378855	

Sample Location: PBSC

Collection Date/Time: 02/04/2020 11:22

Field ID: SB-15 (0.5-2)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155848	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.10	U	ug/Kg	P378518	
		Perfluorodecanoic acid (PFDA)**	0.10	U	ug/Kg	P378518	MS
		Perfluorododecanoic acid (PFDoA)**	0.10	U	ug/Kg	P378518	
		Perfluoroheptanoic acid (PFHpA)**	0.19	I	ug/Kg	P378518	
		Perfluorohexanesulfonic acid (PFHxS)**	0.10	U	ug/Kg	P378518	
		Perfluorohexanoic acid (PFHxA)**	0.16	I	ug/Kg	P378518	
		Perfluorononanoic acid (PFNA)**	0.19	I	ug/Kg	P378518	MS, RPD
		Perfluorooctanesulfonic acid (PFOS)**	0.92		ug/Kg	P378518	
		Perfluorooctanoic acid (PFOA)**	0.12	I	ug/Kg	P378518	
		Perfluorotetradecanoic acid (PFTeA)**	0.10	U	ug/Kg	P378518	
		Perfluorotridecanoic acid (PFTriA)**	0.10	U	ug/Kg	P378518	
		Perfluoroundecanoic acid (PFUnA)**	0.10	U	ug/Kg	P378518	RPD
		N-Me perfluorooctanesulfonamidoAc acid**	0.10	U	ug/Kg	P378518	
		N-Et perfluorooctanesulfonamidoAc acid**	0.10	U	ug/Kg	P378518	
		Perfluoropentanoic acid (PFPeA)**	0.41	U	ug/Kg	P378518	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.21	U	ug/Kg	P378518	
		Perfluoropentanesulfonic acid (PFPeS)**	0.10	U	ug/Kg	P378518	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.41	U	ug/Kg	P378518	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.21	U	ug/Kg	P378518	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.10	U	ug/Kg	P378518	
		Perfluorononanesulfonic acid (PFNS)**	0.10	U	ug/Kg	P378518	
		Perfluorodecanesulfonic acid (PFDS)**	0.10	U	ug/Kg	P378518	
2155868	SM 2540 G (20th)	% Solid**	96.9		%	P378855	

Sample Location: PBSC

Collection Date/Time: 02/04/2020 11:24

Field ID: SB-15 (2-4)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155849	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378518	
		Perfluorodecanoic acid (PFDA)**	0.11	U	ug/Kg	P378518	MS
		Perfluorododecanoic acid (PFDoA)**	0.14	I	ug/Kg	P378518	
		Perfluoroheptanoic acid (PFHpA)**	1.0		ug/Kg	P378518	
		Perfluorohexanesulfonic acid (PFHxS)**	0.37	I	ug/Kg	P378518	
		Perfluorohexanoic acid (PFHxA)**	0.49		ug/Kg	P378518	
		Perfluorononanoic acid (PFNA)**	0.11	U	ug/Kg	P378518	MS, RPD
		Perfluorooctanesulfonic acid (PFOS)**	2.1		ug/Kg	P378518	
		Perfluorooctanoic acid (PFOA)**	0.18	I	ug/Kg	P378518	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378518	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378518	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378518	RPD
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378518	
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378518	
		Perfluoropentanoic acid (PFPeA)**	1.1	I	ug/Kg	P378518	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P378518	
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378518	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.44	U	ug/Kg	P378518	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.22	U	ug/Kg	P378518	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378518	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378518	
		Perfluorodecanesulfonic acid (PFDS)**	0.26	I	ug/Kg	P378518	
2155869	SM 2540 G (20th)	% Solid**	93.4		%	P378855	

Sample Location: PBSC

Collection Date/Time: 02/04/2020 11:26

Field ID: SB-15 (4-5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155850	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P378518	
		Perfluorodecanoic acid (PFDA)**	0.12	U	ug/Kg	P378518	MS
		Perfluorododecanoic acid (PFDoA)**	0.13	I	ug/Kg	P378518	
		Perfluoroheptanoic acid (PFHpA)**	1.0		ug/Kg	P378518	
		Perfluorohexanesulfonic acid (PFHxS)**	0.27	I	ug/Kg	P378518	
		Perfluorohexanoic acid (PFHxA)**	0.90		ug/Kg	P378518	
		Perfluorononanoic acid (PFNA)**	0.12	U	ug/Kg	P378518	MS, RPD
		Perfluorooctanesulfonic acid (PFOS)**	0.92	I	ug/Kg	P378518	
		Perfluorooctanoic acid (PFOA)**	0.12	U	ug/Kg	P378518	
		Perfluorotetradecanoic acid (PFTeA)**	0.12	U	ug/Kg	P378518	
		Perfluorotridecanoic acid (PFTriA)**	0.12	U	ug/Kg	P378518	
		Perfluoroundecanoic acid (PFUnA)**	0.12	U	ug/Kg	P378518	RPD
		N-Me perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P378518	
		N-Et perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P378518	
		Perfluoropentanoic acid (PFPeA)**	1.2	I	ug/Kg	P378518	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.25	U	ug/Kg	P378518	
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	U	ug/Kg	P378518	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.50	U	ug/Kg	P378518	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.25	U	ug/Kg	P378518	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P378518	
		Perfluorononanesulfonic acid (PFNS)**	0.12	U	ug/Kg	P378518	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	I	ug/Kg	P378518	
2155870	SM 2540 G (20th)	% Solid**	86.2		%	P378855	

Sample Location: PBSC

Collection Date/Time: 02/04/2020 11:40

Field ID: SB-16 (0-0.5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155851	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378518	
		Perfluorodecanoic acid (PFDA)**	0.39	I	ug/Kg	P378518	MS
		Perfluorododecanoic acid (PFDoA)**	0.23	I	ug/Kg	P378518	
		Perfluoroheptanoic acid (PFHpA)**	0.28	I	ug/Kg	P378518	
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P378518	
		Perfluorohexanoic acid (PFHxA)**	0.12	I	ug/Kg	P378518	
		Perfluorononanoic acid (PFNA)**	0.19	I	ug/Kg	P378518	MS, RPD
		Perfluorooctanesulfonic acid (PFOS)**	1.5		ug/Kg	P378518	
		Perfluorooctanoic acid (PFOA)**	0.15	I	ug/Kg	P378518	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378518	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378518	
		Perfluoroundecanoic acid (PFUnA)**	0.26	I	ug/Kg	P378518	RPD
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378518	
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378518	
		Perfluoropentanoic acid (PFPeA)**	0.45	U	ug/Kg	P378518	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P378518	
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378518	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.45	U	ug/Kg	P378518	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.22	U	ug/Kg	P378518	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378518	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378518	
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378518	
2155871	SM 2540 G (20th)	% Solid**	91.8		%	P378855	

Sample Location: PBSC

Collection Date/Time: 02/04/2020 11:42

Field ID: SB-16 (0.5-2)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155852	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378518	
		Perfluorodecanoic acid (PFDA)**	0.15	I	ug/Kg	P378518	MS
		Perfluorododecanoic acid (PFDoA)**	0.19	I	ug/Kg	P378518	
		Perfluoroheptanoic acid (PFHpA)**	0.38	I	ug/Kg	P378518	
		Perfluorohexanesulfonic acid (PFHxS)**	0.16	I	ug/Kg	P378518	
		Perfluorohexanoic acid (PFHxA)**	0.21	I	ug/Kg	P378518	
		Perfluorononanoic acid (PFNA)**	0.46		ug/Kg	P378518	MS, RPD
		Perfluorooctanesulfonic acid (PFOS)**	3.9		ug/Kg	P378518	
		Perfluorooctanoic acid (PFOA)**	0.31	I	ug/Kg	P378518	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378518	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378518	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378518	RPD
		N-Me perfluorooctanesulfonamidoAc acid**	0.11	UJ	ug/Kg	P378518	CCV
		N-Et perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P378518	
		Perfluoropentanoic acid (PFPeA)**	0.44	U	ug/Kg	P378518	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P378518	
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378518	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.44	U	ug/Kg	P378518	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.22	U	ug/Kg	P378518	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378518	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378518	
		Perfluorodecanesulfonic acid (PFDS)**	0.16	I	ug/Kg	P378518	
2155872	SM 2540 G (20th)	% Solid**	92.5	A	%	P378856	

Ref. Method and Comment:

EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 11:44

Field ID: SB-16 (2-4)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155853	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378518	
		Perfluorodecanoic acid (PFDA)**	0.21	I	ug/Kg	P378518	MS
		Perfluorododecanoic acid (PFDoA)**	0.38	I	ug/Kg	P378518	
		Perfluoroheptanoic acid (PFHpA)**	0.67		ug/Kg	P378518	
		Perfluorohexanesulfonic acid (PFHxS)**	0.52		ug/Kg	P378518	
		Perfluorohexanoic acid (PFHxA)**	0.25	I	ug/Kg	P378518	
		Perfluorononanoic acid (PFNA)**	0.25	I	ug/Kg	P378518	MS, RPD
		Perfluorooctanesulfonic acid (PFOS)**	3.9		ug/Kg	P378518	
		Perfluorooctanoic acid (PFOA)**	1.0		ug/Kg	P378518	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378518	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378518	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378518	RPD
		N-Me perfluorooctanesulfonamidoAcid**	0.11	UJ	ug/Kg	P378518	CCV
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378518	
		Perfluoropentanoic acid (PFPeA)**	0.56	I	ug/Kg	P378518	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.23	U	ug/Kg	P378518	
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378518	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.46	U	ug/Kg	P378518	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.23	U	ug/Kg	P378518	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378518	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378518	
		Perfluorodecanesulfonic acid (PFDS)**	0.16	I	ug/Kg	P378518	
2155873	SM 2540 G (20th)	% Solid**	90.3		%	P378856	

Ref. Method and Comment:

EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 11:46

Field ID: SB-16 (4-5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155854	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.13	U	ug/Kg	P378518	
		Perfluorodecanoic acid (PFDA)**	0.13	U	ug/Kg	P378518	MS
		Perfluorododecanoic acid (PFDoA)**	0.13	U	ug/Kg	P378518	
		Perfluoroheptanoic acid (PFHpA)**	0.37	I	ug/Kg	P378518	
		Perfluorohexanesulfonic acid (PFHxS)**	0.92		ug/Kg	P378518	
		Perfluorohexanoic acid (PFHxA)**	0.23	I	ug/Kg	P378518	
		Perfluorononanoic acid (PFNA)**	0.13	U	ug/Kg	P378518	MS, RPD
		Perfluorooctanesulfonic acid (PFOS)**	0.80	I	ug/Kg	P378518	
		Perfluorooctanoic acid (PFOA)**	0.32	I	ug/Kg	P378518	
		Perfluorotetradecanoic acid (PFTeA)**	0.13	U	ug/Kg	P378518	
		Perfluorotridecanoic acid (PFTriA)**	0.13	U	ug/Kg	P378518	
		Perfluoroundecanoic acid (PFUnA)**	0.13	U	ug/Kg	P378518	RPD
		N-Me perfluorooctanesulfonamidoAcid**	0.13	UJ	ug/Kg	P378518	CCV
		N-Et perfluorooctanesulfonamidoAcid**	0.13	U	ug/Kg	P378518	
		Perfluoropentanoic acid (PFPeA)**	0.52	U	ug/Kg	P378518	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.26	U	ug/Kg	P378518	
		Perfluoropentanesulfonic acid (PFPeS)**	0.13	U	ug/Kg	P378518	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.52	U	ug/Kg	P378518	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.26	U	ug/Kg	P378518	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.13	U	ug/Kg	P378518	
		Perfluorononanesulfonic acid (PFNS)**	0.13	U	ug/Kg	P378518	
		Perfluorodecanesulfonic acid (PFDS)**	0.13	U	ug/Kg	P378518	
2155874	SM 2540 G (20th)	% Solid**	83.7		%	P378856	

Ref. Method and Comment:

EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 12:02

Field ID: SB-17 (0.5-2)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155855	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.10	U	ug/Kg	P378518	
		Perfluorodecanoic acid (PFDA)**	0.10	U	ug/Kg	P378518	MS
		Perfluorododecanoic acid (PFDoA)**	0.10	U	ug/Kg	P378518	
		Perfluoroheptanoic acid (PFHpA)**	0.10	U	ug/Kg	P378518	
		Perfluorohexanesulfonic acid (PFHxS)**	0.10	U	ug/Kg	P378518	
		Perfluorohexanoic acid (PFHxA)**	0.10	U	ug/Kg	P378518	
		Perfluorononanoic acid (PFNA)**	0.10	U	ug/Kg	P378518	MS, RPD
		Perfluorooctanesulfonic acid (PFOS)**	0.73	I	ug/Kg	P378518	
		Perfluorooctanoic acid (PFOA)**	0.10	U	ug/Kg	P378518	
		Perfluorotetradecanoic acid (PFTeA)**	0.10	U	ug/Kg	P378518	
		Perfluorotridecanoic acid (PFTriA)**	0.10	U	ug/Kg	P378518	
		Perfluoroundecanoic acid (PFUnA)**	0.10	U	ug/Kg	P378518	RPD
		N-Me perfluorooctanesulfonamidoAcid**	0.10	UJ	ug/Kg	P378518	CCV
		N-Et perfluorooctanesulfonamidoAcid**	0.10	U	ug/Kg	P378518	
		Perfluoropentanoic acid (PFPeA)**	0.42	U	ug/Kg	P378518	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.21	U	ug/Kg	P378518	
		Perfluoropentanesulfonic acid (PFPeS)**	0.10	U	ug/Kg	P378518	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.42	U	ug/Kg	P378518	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.21	U	ug/Kg	P378518	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.10	U	ug/Kg	P378518	
		Perfluorononanesulfonic acid (PFNS)**	0.10	U	ug/Kg	P378518	
		Perfluorodecanesulfonic acid (PFDS)**	0.10	U	ug/Kg	P378518	
2155875	SM 2540 G (20th)	% Solid**	95.9		%	P378856	

Ref. Method and Comment:

EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 12:00

Field ID: SB-17 (0-0.5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155856	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.10	U	ug/Kg	P378518	
		Perfluorodecanoic acid (PFDA)**	0.17	I	ug/Kg	P378518	MS
		Perfluorododecanoic acid (PFDoA)**	0.10	U	ug/Kg	P378518	
		Perfluoroheptanoic acid (PFHpA)**	0.16	I	ug/Kg	P378518	
		Perfluorohexanesulfonic acid (PFHxS)**	0.10	U	ug/Kg	P378518	
		Perfluorohexanoic acid (PFHxA)**	0.10	U	ug/Kg	P378518	
		Perfluorononanoic acid (PFNA)**	0.10	U	ug/Kg	P378518	MS, RPD
		Perfluorooctanesulfonic acid (PFOS)**	0.74	I	ug/Kg	P378518	
		Perfluorooctanoic acid (PFOA)**	0.10	U	ug/Kg	P378518	
		Perfluorotetradecanoic acid (PFTeA)**	0.10	U	ug/Kg	P378518	
		Perfluorotridecanoic acid (PFTriA)**	0.10	U	ug/Kg	P378518	
		Perfluoroundecanoic acid (PFUnA)**	0.10	U	ug/Kg	P378518	RPD
		N-Me perfluorooctanesulfonamidoAc acid**	0.10	UJ	ug/Kg	P378518	CCV
		N-Et perfluorooctanesulfonamidoAc acid**	0.10	U	ug/Kg	P378518	
		Perfluoropentanoic acid (PFPeA)**	0.42	U	ug/Kg	P378518	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.21	U	ug/Kg	P378518	
		Perfluoropentanesulfonic acid (PFPeS)**	0.10	U	ug/Kg	P378518	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.42	U	ug/Kg	P378518	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.21	U	ug/Kg	P378518	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.10	U	ug/Kg	P378518	
		Perfluorononanesulfonic acid (PFNS)**	0.10	U	ug/Kg	P378518	
		Perfluorodecanesulfonic acid (PFDS)**	0.10	U	ug/Kg	P378518	
2155876	SM 2540 G (20th)	% Solid**	96.5		%	P378856	

Ref. Method and Comment:

EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 12:04

Field ID: SB-17 (2-4)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155857	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378518	
		Perfluorodecanoic acid (PFDA)**	0.11	U	ug/Kg	P378518	MS
		Perfluorododecanoic acid (PFDoA)**	0.11	U	ug/Kg	P378518	
		Perfluoroheptanoic acid (PFHpA)**	0.24	I	ug/Kg	P378518	
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P378518	
		Perfluorohexanoic acid (PFHxA)**	0.24	I	ug/Kg	P378518	
		Perfluorononanoic acid (PFNA)**	0.11	U	ug/Kg	P378518	MS, RPD
		Perfluorooctanesulfonic acid (PFOS)**	1.1		ug/Kg	P378518	
		Perfluorooctanoic acid (PFOA)**	0.15	I	ug/Kg	P378518	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378518	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378518	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378518	RPD
		N-Me perfluorooctanesulfonamidoAcid**	0.11	UJ	ug/Kg	P378518	CCV
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378518	
		Perfluoropentanoic acid (PFPeA)**	0.63	I	ug/Kg	P378518	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P378518	
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378518	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.43	U	ug/Kg	P378518	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.22	U	ug/Kg	P378518	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378518	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378518	
		Perfluorodecanesulfonic acid (PFDS)**	0.16	I	ug/Kg	P378518	
2155877	SM 2540 G (20th)	% Solid**	93.5		%	P378856	

Ref. Method and Comment:

EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 14:15

Field ID: SB-3 (0-0.5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155858	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378518	
		Perfluorodecanoic acid (PFDA)**	1.7		ug/Kg	P378518	MS
		Perfluorododecanoic acid (PFDoA)**	0.57		ug/Kg	P378518	
		Perfluoroheptanoic acid (PFHpA)**	0.81		ug/Kg	P378518	
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P378518	
		Perfluorohexanoic acid (PFHxA)**	1.2		ug/Kg	P378518	
		Perfluorononanoic acid (PFNA)**	0.54		ug/Kg	P378518	MS, RPD
		Perfluorooctanesulfonic acid (PFOS)**	0.57	I	ug/Kg	P378518	
		Perfluorooctanoic acid (PFOA)**	0.74		ug/Kg	P378518	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378518	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378518	
		Perfluoroundecanoic acid (PFUnA)**	0.54		ug/Kg	P378518	RPD
		N-Me perfluorooctanesulfonamidoAcid**	0.11	UJ	ug/Kg	P378518	CCV
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378518	
		Perfluoropentanoic acid (PFPeA)**	1.2	I	ug/Kg	P378518	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.21	U	ug/Kg	P378518	
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378518	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.43	U	ug/Kg	P378518	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	1.7		ug/Kg	P378518	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378518	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378518	
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378518	
2155878	SM 2540 G (20th)	% Solid**	94.6		%	P378856	

Ref. Method and Comment:

EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 14:17

Field ID: SB-3 (0.5-2)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155859	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P378518	
		Perfluorodecanoic acid (PFDA)**	1.5		ug/Kg	P378518	MS
		Perfluorododecanoic acid (PFDoA)**	0.29	I	ug/Kg	P378518	
		Perfluoroheptanoic acid (PFHpA)**	0.89		ug/Kg	P378518	
		Perfluorohexanesulfonic acid (PFHxS)**	0.12	U	ug/Kg	P378518	
		Perfluorohexanoic acid (PFHxA)**	0.79		ug/Kg	P378518	
		Perfluorononanoic acid (PFNA)**	1.8		ug/Kg	P378518	MS, RPD
		Perfluorooctanesulfonic acid (PFOS)**	3.8		ug/Kg	P378518	
		Perfluorooctanoic acid (PFOA)**	1.1		ug/Kg	P378518	
		Perfluorotetradecanoic acid (PFTeA)**	0.12	U	ug/Kg	P378518	
		Perfluorotridecanoic acid (PFTriA)**	0.12	U	ug/Kg	P378518	
		Perfluoroundecanoic acid (PFUnA)**	0.22	I	ug/Kg	P378518	RPD
		N-Me perfluorooctanesulfonamidoAcid**	0.12	UJ	ug/Kg	P378518	CCV
		N-Et perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378518	
		Perfluoropentanoic acid (PFPeA)**	1.0	I	ug/Kg	P378518	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.23	U	ug/Kg	P378518	
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	U	ug/Kg	P378518	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.51	I	ug/Kg	P378518	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	1.6		ug/Kg	P378518	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P378518	
		Perfluorononanesulfonic acid (PFNS)**	0.18	I	ug/Kg	P378518	
		Perfluorodecanesulfonic acid (PFDS)**	0.12	U	ug/Kg	P378518	
2155879	SM 2540 G (20th)	% Solid**	90.8		%	P378856	

Ref. Method and Comment:

EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 14:19

Field ID: SB-3 (2-4)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155860	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378519	
		Perfluorodecanoic acid (PFDA)**	0.11	U	ug/Kg	P378519	
		Perfluorododecanoic acid (PFDoA)**	0.11	U	ug/Kg	P378519	
		Perfluoroheptanoic acid (PFHpA)**	0.58		ug/Kg	P378519	
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	UJ	ug/Kg	P378519	MS
		Perfluorohexanoic acid (PFHxA)**	0.34	I	ug/Kg	P378519	
		Perfluorononanoic acid (PFNA)**	1.6		ug/Kg	P378519	
		Perfluorooctanesulfonic acid (PFOS)**	14		ug/Kg	P378519	
		Perfluorooctanoic acid (PFOA)**	0.93		ug/Kg	P378519	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378519	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378519	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378519	
		N-Me perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P378519	
		N-Et perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P378519	
		Perfluoropentanoic acid (PFPeA)**	0.81	I	ug/Kg	P378519	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P378519	
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378519	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.45	UJ	ug/Kg	P378519	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.22	UJ	ug/Kg	P378519	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378519	
		Perfluorononanesulfonic acid (PFNS)**	0.11	UJ	ug/Kg	P378519	MS
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378519	
2155880	SM 2540 G (20th)	% Solid**	92.2		%	P378856	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameters in the spiked sample. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 14:21

Field ID: SB-3 (4-5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155861	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P378519	
		Perfluorodecanoic acid (PFDA)**	0.12	U	ug/Kg	P378519	
		Perfluorododecanoic acid (PFDoA)**	0.12	U	ug/Kg	P378519	
		Perfluoroheptanoic acid (PFHpA)**	0.47	I	ug/Kg	P378519	
		Perfluorohexanesulfonic acid (PFHxS)**	0.12	U	ug/Kg	P378519	MS
		Perfluorohexanoic acid (PFHxA)**	0.26	I	ug/Kg	P378519	
		Perfluorononanoic acid (PFNA)**	0.21	I	ug/Kg	P378519	
		Perfluorooctanesulfonic acid (PFOS)**	4.3		ug/Kg	P378519	
		Perfluorooctanoic acid (PFOA)**	0.40	I	ug/Kg	P378519	
		Perfluorotetradecanoic acid (PFTeA)**	0.12	U	ug/Kg	P378519	
		Perfluorotridecanoic acid (PFTriA)**	0.12	U	ug/Kg	P378519	
		Perfluoroundecanoic acid (PFUnA)**	0.12	U	ug/Kg	P378519	
		N-Me perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P378519	
		N-Et perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P378519	
		Perfluoropentanoic acid (PFPeA)**	0.74	I	ug/Kg	P378519	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.25	U	ug/Kg	P378519	
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	U	ug/Kg	P378519	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.50	U	ug/Kg	P378519	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.25	U	ug/Kg	P378519	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P378519	
		Perfluorononanesulfonic acid (PFNS)**	0.12	U	ug/Kg	P378519	MS
		Perfluorodecanesulfonic acid (PFDS)**	0.12	U	ug/Kg	P378519	
2155881	SM 2540 G (20th)	% Solid**	85.5		%	P378856	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 14:50

Field ID: SB-4 (0-0.5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155862	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P378519	
		Perfluorodecanoic acid (PFDA)**	0.42	I	ug/Kg	P378519	
		Perfluorododecanoic acid (PFDoA)**	0.18	I	ug/Kg	P378519	
		Perfluoroheptanoic acid (PFHpA)**	0.50		ug/Kg	P378519	
		Perfluorohexanesulfonic acid (PFHxS)**	0.12	U	ug/Kg	P378519	MS
		Perfluorohexanoic acid (PFHxA)**	0.22	I	ug/Kg	P378519	
		Perfluorononanoic acid (PFNA)**	0.38	I	ug/Kg	P378519	
		Perfluorooctanesulfonic acid (PFOS)**	1.5		ug/Kg	P378519	
		Perfluorooctanoic acid (PFOA)**	0.38	I	ug/Kg	P378519	
		Perfluorotetradecanoic acid (PFTeA)**	0.12	U	ug/Kg	P378519	
		Perfluorotridecanoic acid (PFTriA)**	0.12	U	ug/Kg	P378519	
		Perfluoroundecanoic acid (PFUnA)**	0.28	I	ug/Kg	P378519	
		N-Me perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378519	
		N-Et perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378519	
		Perfluoropentanoic acid (PFPeA)**	0.87	I	ug/Kg	P378519	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.23	U	ug/Kg	P378519	
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	U	ug/Kg	P378519	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.46	U	ug/Kg	P378519	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.23	U	ug/Kg	P378519	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P378519	
		Perfluorononanesulfonic acid (PFNS)**	0.12	U	ug/Kg	P378519	MS
		Perfluorodecanesulfonic acid (PFDS)**	0.12	U	ug/Kg	P378519	
2155882	SM 2540 G (20th)	% Solid**	89.5	A	%	P378935	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 14:52

Field ID: SB-4 (0.5-2)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155863	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P378519	
		Perfluorodecanoic acid (PFDA)**	0.12	U	ug/Kg	P378519	
		Perfluorododecanoic acid (PFDoA)**	0.12	U	ug/Kg	P378519	
		Perfluoroheptanoic acid (PFHpA)**	0.31	I	ug/Kg	P378519	
		Perfluorohexanesulfonic acid (PFHxS)**	0.12	U	ug/Kg	P378519	MS
		Perfluorohexanoic acid (PFHxA)**	0.26	I	ug/Kg	P378519	
		Perfluorononanoic acid (PFNA)**	0.24	I	ug/Kg	P378519	
		Perfluorooctanesulfonic acid (PFOS)**	1.6		ug/Kg	P378519	
		Perfluorooctanoic acid (PFOA)**	0.24	I	ug/Kg	P378519	
		Perfluorotetradecanoic acid (PFTeA)**	0.12	U	ug/Kg	P378519	
		Perfluorotridecanoic acid (PFTriA)**	0.12	U	ug/Kg	P378519	
		Perfluoroundecanoic acid (PFUnA)**	0.12	U	ug/Kg	P378519	
		N-Me perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378519	
		N-Et perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378519	
		Perfluoropentanoic acid (PFPeA)**	0.73	I	ug/Kg	P378519	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.25	U	ug/Kg	P378519	
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	U	ug/Kg	P378519	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.49	U	ug/Kg	P378519	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.25	U	ug/Kg	P378519	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P378519	
		Perfluorononanesulfonic acid (PFNS)**	0.12	U	ug/Kg	P378519	MS
		Perfluorodecanesulfonic acid (PFDS)**	0.12	U	ug/Kg	P378519	
2155883	SM 2540 G (20th)	% Solid**	86.9		%	P378935	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 14:54

Field ID: SB-4 (2-4)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155864	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P378519	
		Perfluorodecanoic acid (PFDA)**	0.16	I	ug/Kg	P378519	
		Perfluorododecanoic acid (PFDoA)**	0.17	I	ug/Kg	P378519	
		Perfluoroheptanoic acid (PFHpA)**	0.29	I	ug/Kg	P378519	
		Perfluorohexanesulfonic acid (PFHxS)**	0.12	U	ug/Kg	P378519	MS
		Perfluorohexanoic acid (PFHxA)**	0.12	U	ug/Kg	P378519	
		Perfluorononanoic acid (PFNA)**	0.12	U	ug/Kg	P378519	
		Perfluorooctanesulfonic acid (PFOS)**	0.69	I	ug/Kg	P378519	
		Perfluorooctanoic acid (PFOA)**	0.21	I	ug/Kg	P378519	
		Perfluorotetradecanoic acid (PFTeA)**	0.12	U	ug/Kg	P378519	
		Perfluorotridecanoic acid (PFTriA)**	0.12	U	ug/Kg	P378519	
		Perfluoroundecanoic acid (PFUnA)**	0.12	U	ug/Kg	P378519	
		N-Me perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378519	
		N-Et perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378519	
		Perfluoropentanoic acid (PFPeA)**	0.47	U	ug/Kg	P378519	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.24	U	ug/Kg	P378519	
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	U	ug/Kg	P378519	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.47	U	ug/Kg	P378519	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.24	U	ug/Kg	P378519	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P378519	
		Perfluorononanesulfonic acid (PFNS)**	0.12	U	ug/Kg	P378519	MS
		Perfluorodecanesulfonic acid (PFDS)**	0.12	U	ug/Kg	P378519	
2155884	SM 2540 G (20th)	% Solid**	88.7		%	P378935	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 14:56

Field ID: SB-4 (4-5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155865	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.13	U	ug/Kg	P378519	
		Perfluorodecanoic acid (PFDA)**	0.13	U	ug/Kg	P378519	
		Perfluorododecanoic acid (PFDoA)**	0.13	U	ug/Kg	P378519	
		Perfluoroheptanoic acid (PFHpA)**	0.13	U	ug/Kg	P378519	
		Perfluorohexanesulfonic acid (PFHxS)**	0.13	U	ug/Kg	P378519	MS
		Perfluorohexanoic acid (PFHxA)**	0.13	U	ug/Kg	P378519	
		Perfluorononanoic acid (PFNA)**	0.13	U	ug/Kg	P378519	
		Perfluorooctanesulfonic acid (PFOS)**	0.28	I	ug/Kg	P378519	
		Perfluorooctanoic acid (PFOA)**	0.13	U	ug/Kg	P378519	
		Perfluorotetradecanoic acid (PFTeA)**	0.13	U	ug/Kg	P378519	
		Perfluorotridecanoic acid (PFTriA)**	0.13	U	ug/Kg	P378519	
		Perfluoroundecanoic acid (PFUnA)**	0.13	U	ug/Kg	P378519	
		N-Me perfluorooctanesulfonamidoAcid**	0.13	U	ug/Kg	P378519	
		N-Et perfluorooctanesulfonamidoAcid**	0.13	U	ug/Kg	P378519	
		Perfluoropentanoic acid (PFPeA)**	0.51	U	ug/Kg	P378519	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.25	U	ug/Kg	P378519	
		Perfluoropentanesulfonic acid (PFPeS)**	0.13	U	ug/Kg	P378519	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.51	U	ug/Kg	P378519	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.25	U	ug/Kg	P378519	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.13	U	ug/Kg	P378519	
		Perfluorononanesulfonic acid (PFNS)**	0.13	U	ug/Kg	P378519	MS
		Perfluorodecanesulfonic acid (PFDS)**	0.13	U	ug/Kg	P378519	
2155885	SM 2540 G (20th)	% Solid**	85.6		%	P378935	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 15:15

Field ID: SB-5 (0-0.5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155904	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378519	
		Perfluorodecanoic acid (PFDA)**	1.5		ug/Kg	P378519	
		Perfluorododecanoic acid (PFDoA)**	0.46		ug/Kg	P378519	
		Perfluoroheptanoic acid (PFHpA)**	0.53		ug/Kg	P378519	
		Perfluorohexanesulfonic acid (PFHxS)**	1.0		ug/Kg	P378519	MS
		Perfluorohexanoic acid (PFHxA)**	0.32	I	ug/Kg	P378519	
		Perfluorononanoic acid (PFNA)**	0.62		ug/Kg	P378519	
		Perfluorooctanesulfonic acid (PFOS)**	3.6		ug/Kg	P378519	
		Perfluorooctanoic acid (PFOA)**	0.64		ug/Kg	P378519	
		Perfluorotetradecanoic acid (PFTeA)**	0.13	I	ug/Kg	P378519	
		Perfluorotridecanoic acid (PFTriA)**	0.18	I	ug/Kg	P378519	
		Perfluoroundecanoic acid (PFUnA)**	1.2		ug/Kg	P378519	
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378519	
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378519	
		Perfluoropentanoic acid (PFPeA)**	0.47	I	ug/Kg	P378519	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P378519	
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378519	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.45	U	ug/Kg	P378519	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.37	I	ug/Kg	P378519	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378519	
		Perfluorononanesulfonic acid (PFNS)**	0.23	I	ug/Kg	P378519	MS
		Perfluorodecanesulfonic acid (PFDS)**	0.36	I	ug/Kg	P378519	
2155950	SM 2540 G (20th)	% Solid**	93.0		%	P378935	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 15:17

Field ID: SB-5 (0.5-2)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155905	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378519	
		Perfluorodecanoic acid (PFDA)**	1.4		ug/Kg	P378519	
		Perfluorododecanoic acid (PFDoA)**	0.16	I	ug/Kg	P378519	
		Perfluoroheptanoic acid (PFHpA)**	0.96		ug/Kg	P378519	
		Perfluorohexanesulfonic acid (PFHxS)**	1.5		ug/Kg	P378519	MS
		Perfluorohexanoic acid (PFHxA)**	0.47		ug/Kg	P378519	
		Perfluorononanoic acid (PFNA)**	1.7		ug/Kg	P378519	
		Perfluorooctanesulfonic acid (PFOS)**	17		ug/Kg	P378519	
		Perfluorooctanoic acid (PFOA)**	1.3		ug/Kg	P378519	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378519	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378519	
		Perfluoroundecanoic acid (PFUnA)**	0.45	I	ug/Kg	P378519	
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378519	
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378519	
		Perfluoropentanoic acid (PFPeA)**	1.1	I	ug/Kg	P378519	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.23	U	ug/Kg	P378519	
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378519	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.46	U	ug/Kg	P378519	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.23	U	ug/Kg	P378519	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.20	I	ug/Kg	P378519	
		Perfluorononanesulfonic acid (PFNS)**	0.15	I	ug/Kg	P378519	MS
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378519	
2155951	SM 2540 G (20th)	% Solid**	90.6		%	P378935	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 15:19

Field ID: SB-5 (2-4)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155906	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.13	U	ug/Kg	P378519	
		Perfluorodecanoic acid (PFDA)**	0.13	U	ug/Kg	P378519	
		Perfluorododecanoic acid (PFDoA)**	0.13	U	ug/Kg	P378519	
		Perfluoroheptanoic acid (PFHpA)**	3.0		ug/Kg	P378519	
		Perfluorohexanesulfonic acid (PFHxS)**	2.8		ug/Kg	P378519	MS
		Perfluorohexanoic acid (PFHxA)**	0.90		ug/Kg	P378519	
		Perfluorononanoic acid (PFNA)**	0.13	U	ug/Kg	P378519	
		Perfluorooctanesulfonic acid (PFOS)**	1.6		ug/Kg	P378519	
		Perfluorooctanoic acid (PFOA)**	0.34	I	ug/Kg	P378519	
		Perfluorotetradecanoic acid (PFTeA)**	0.13	U	ug/Kg	P378519	
		Perfluorotridecanoic acid (PFTriA)**	0.13	U	ug/Kg	P378519	
		Perfluoroundecanoic acid (PFUnA)**	0.13	U	ug/Kg	P378519	
		N-Me perfluorooctanesulfonamidoAcid**	0.13	U	ug/Kg	P378519	
		N-Et perfluorooctanesulfonamidoAcid**	0.13	U	ug/Kg	P378519	
		Perfluoropentanoic acid (PFPeA)**	2.1		ug/Kg	P378519	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.25	U	ug/Kg	P378519	
		Perfluoropentanesulfonic acid (PFPeS)**	0.13	U	ug/Kg	P378519	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.51	U	ug/Kg	P378519	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.25	U	ug/Kg	P378519	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.13	U	ug/Kg	P378519	
		Perfluorononanesulfonic acid (PFNS)**	0.13	U	ug/Kg	P378519	MS
		Perfluorodecanesulfonic acid (PFDS)**	0.13	U	ug/Kg	P378519	
2155952	SM 2540 G (20th)	% Solid**	85.2		%	P378935	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 15:21

Field ID: SB-5 (4-5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155907	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.16	U	ug/Kg	P378519	
		Perfluorodecanoic acid (PFDA)**	3.1		ug/Kg	P378519	
		Perfluorododecanoic acid (PFDoA)**	3.4		ug/Kg	P378519	
		Perfluoroheptanoic acid (PFHpA)**	0.16	U	ug/Kg	P378519	
		Perfluorohexanesulfonic acid (PFHxS)**	2.9		ug/Kg	P378519	MS
		Perfluorohexanoic acid (PFHxA)**	4.4		ug/Kg	P378519	
		Perfluorononanoic acid (PFNA)**	1.6		ug/Kg	P378519	
		Perfluorooctanesulfonic acid (PFOS)**	13		ug/Kg	P378519	
		Perfluorooctanoic acid (PFOA)**	1.5		ug/Kg	P378519	
		Perfluorotetradecanoic acid (PFTeA)**	2.1		ug/Kg	P378519	
		Perfluorotridecanoic acid (PFTriA)**	0.16	U	ug/Kg	P378519	
		Perfluoroundecanoic acid (PFUnA)**	2.1		ug/Kg	P378519	
		N-Me perfluorooctanesulfonamidoAcid**	0.33	I	ug/Kg	P378519	
		N-Et perfluorooctanesulfonamidoAcid**	0.71		ug/Kg	P378519	
		Perfluoropentanoic acid (PFPeA)**	25		ug/Kg	P378519	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.45	I	ug/Kg	P378519	
		Perfluoropentanesulfonic acid (PFPeS)**	0.16	U	ug/Kg	P378519	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	3.8		ug/Kg	P378519	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.32	U	ug/Kg	P378519	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.16	U	ug/Kg	P378519	
		Perfluorononanesulfonic acid (PFNS)**	0.16	U	ug/Kg	P378519	MS
		Perfluorodecanesulfonic acid (PFDS)**	0.16	U	ug/Kg	P378519	
2155953	SM 2540 G (20th)	% Solid**	71.1		%	P378935	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 12:06

Field ID: SB-17 (4-5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155908	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P378519	
		Perfluorodecanoic acid (PFDA)**	0.12	U	ug/Kg	P378519	
		Perfluorododecanoic acid (PFDoA)**	0.12	U	ug/Kg	P378519	
		Perfluoroheptanoic acid (PFHpA)**	0.15	I	ug/Kg	P378519	
		Perfluorohexanesulfonic acid (PFHxS)**	0.12	U	ug/Kg	P378519	MS
		Perfluorohexanoic acid (PFHxA)**	0.18	I	ug/Kg	P378519	
		Perfluorononanoic acid (PFNA)**	0.12	U	ug/Kg	P378519	
		Perfluorooctanesulfonic acid (PFOS)**	2.5		ug/Kg	P378519	
		Perfluorooctanoic acid (PFOA)**	0.19	I	ug/Kg	P378519	
		Perfluorotetradecanoic acid (PFTeA)**	0.12	U	ug/Kg	P378519	
		Perfluorotridecanoic acid (PFTriA)**	0.12	U	ug/Kg	P378519	
		Perfluoroundecanoic acid (PFUnA)**	0.12	U	ug/Kg	P378519	
		N-Me perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P378519	
		N-Et perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P378519	
		Perfluoropentanoic acid (PFPeA)**	0.80	I	ug/Kg	P378519	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.25	U	ug/Kg	P378519	
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	U	ug/Kg	P378519	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.49	U	ug/Kg	P378519	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.25	U	ug/Kg	P378519	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P378519	
		Perfluorononanesulfonic acid (PFNS)**	0.12	U	ug/Kg	P378519	MS
		Perfluorodecanesulfonic acid (PFDS)**	0.12	U	ug/Kg	P378519	
2155954	SM 2540 G (20th)	% Solid**	85.8		%	P378935	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 13:00

Field ID: SB-19 (0-0.5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155909	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P378519	
		Perfluorodecanoic acid (PFDA)**	0.60	I	ug/Kg	P378519	
		Perfluorododecanoic acid (PFDoA)**	0.58	U	ug/Kg	P378519	
		Perfluoroheptanoic acid (PFHpA)**	0.58	U	ug/Kg	P378519	
		Perfluorohexanesulfonic acid (PFHxS)**	0.58	U	ug/Kg	P378519	MS
		Perfluorohexanoic acid (PFHxA)**	0.58	U	ug/Kg	P378519	
		Perfluorononanoic acid (PFNA)**	0.58	U	ug/Kg	P378519	
		Perfluorooctanesulfonic acid (PFOS)**	2.2	I	ug/Kg	P378519	
		Perfluorooctanoic acid (PFOA)**	0.58	U	ug/Kg	P378519	
		Perfluorotetradecanoic acid (PFTeA)**	0.58	U	ug/Kg	P378519	
		Perfluorotridecanoic acid (PFTriA)**	0.58	U	ug/Kg	P378519	
		Perfluoroundecanoic acid (PFUnA)**	0.58	U	ug/Kg	P378519	
		N-Me perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P378519	
		N-Et perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P378519	
		Perfluoropentanoic acid (PFPeA)**	1.4	I	ug/Kg	P378519	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.23	U	ug/Kg	P378519	
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	U	ug/Kg	P378519	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.47	U	ug/Kg	P378519	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.23	U	ug/Kg	P378519	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P378519	
		Perfluorononanesulfonic acid (PFNS)**	0.12	U	ug/Kg	P378519	MS
		Perfluorodecanesulfonic acid (PFDS)**	0.58	U	ug/Kg	P378519	
2155955	SM 2540 G (20th)	% Solid**	89.2		%	P378935	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameters in the spiked sample. MDL for some parameters elevated due to matrix interference.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 13:02

Field ID: SB-19 (0.5-2)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155910	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P378519	
		Perfluorodecanoic acid (PFDA)**	0.47	I	ug/Kg	P378519	
		Perfluorododecanoic acid (PFDoA)**	0.18	I	ug/Kg	P378519	
		Perfluoroheptanoic acid (PFHpA)**	0.39	I	ug/Kg	P378519	
		Perfluorohexanesulfonic acid (PFHxS)**	0.61		ug/Kg	P378519	MS
		Perfluorohexanoic acid (PFHxA)**	0.19	I	ug/Kg	P378519	
		Perfluorononanoic acid (PFNA)**	0.35	I	ug/Kg	P378519	
		Perfluorooctanesulfonic acid (PFOS)**	9.1		ug/Kg	P378519	
		Perfluorooctanoic acid (PFOA)**	0.37	I	ug/Kg	P378519	
		Perfluorotetradecanoic acid (PFTeA)**	0.12	U	ug/Kg	P378519	
		Perfluorotridecanoic acid (PFTriA)**	0.12	U	ug/Kg	P378519	
		Perfluoroundecanoic acid (PFUnA)**	0.23	I	ug/Kg	P378519	
		N-Me perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378519	
		N-Et perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378519	
		Perfluoropentanoic acid (PFPeA)**	0.49	U	ug/Kg	P378519	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.24	U	ug/Kg	P378519	
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	U	ug/Kg	P378519	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.49	U	ug/Kg	P378519	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.24	U	ug/Kg	P378519	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P378519	
		Perfluorononanesulfonic acid (PFNS)**	0.12	U	ug/Kg	P378519	MS
		Perfluorodecanesulfonic acid (PFDS)**	0.18	I	ug/Kg	P378519	
2155956	SM 2540 G (20th)	% Solid**	86.8		%	P378936	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 13:04

Field ID: SB-19 (2-3)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155911	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.15	U	ug/Kg	P378519	
		Perfluorodecanoic acid (PFDA)**	0.15	U	ug/Kg	P378519	
		Perfluorododecanoic acid (PFDoA)**	0.15	U	ug/Kg	P378519	
		Perfluoroheptanoic acid (PFHpA)**	0.51	I	ug/Kg	P378519	
		Perfluorohexanesulfonic acid (PFHxS)**	4.0		ug/Kg	P378519	MS
		Perfluorohexanoic acid (PFHxA)**	0.45	I	ug/Kg	P378519	
		Perfluorononanoic acid (PFNA)**	0.15	U	ug/Kg	P378519	
		Perfluorooctanesulfonic acid (PFOS)**	90		ug/Kg	P378519	
		Perfluorooctanoic acid (PFOA)**	1.1		ug/Kg	P378519	
		Perfluorotetradecanoic acid (PFTeA)**	0.15	U	ug/Kg	P378519	
		Perfluorotridecanoic acid (PFTriA)**	0.15	U	ug/Kg	P378519	
		Perfluoroundecanoic acid (PFUnA)**	0.15	U	ug/Kg	P378519	
		N-Me perfluorooctanesulfonamidoAcid**	0.15	U	ug/Kg	P378519	
		N-Et perfluorooctanesulfonamidoAcid**	0.15	U	ug/Kg	P378519	
		Perfluoropentanoic acid (PFPeA)**	0.62	U	ug/Kg	P378519	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.31	U	ug/Kg	P378519	
		Perfluoropentanesulfonic acid (PFPeS)**	0.30	I	ug/Kg	P378519	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.62	U	ug/Kg	P378519	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.42	I	ug/Kg	P378519	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.85		ug/Kg	P378519	
		Perfluorononanesulfonic acid (PFNS)**	0.15	U	ug/Kg	P378519	MS
		Perfluorodecanesulfonic acid (PFDS)**	0.15	U	ug/Kg	P378519	
2155957	SM 2540 G (20th)	% Solid**	73.8		%	P378936	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 13:22

Field ID: SB-22 (0-0.5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155912	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378519	
		Perfluorodecanoic acid (PFDA)**	0.14	I	ug/Kg	P378519	
		Perfluorododecanoic acid (PFDoA)**	0.11	U	ug/Kg	P378519	
		Perfluoroheptanoic acid (PFHpA)**	0.16	I	ug/Kg	P378519	
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P378519	MS
		Perfluorohexanoic acid (PFHxA)**	0.11	U	ug/Kg	P378519	
		Perfluorononanoic acid (PFNA)**	0.11	U	ug/Kg	P378519	
		Perfluorooctanesulfonic acid (PFOS)**	0.47	I	ug/Kg	P378519	
		Perfluorooctanoic acid (PFOA)**	0.26	I	ug/Kg	P378519	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378519	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378519	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378519	
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378519	
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378519	
		Perfluoropentanoic acid (PFPeA)**	0.45	U	ug/Kg	P378519	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.23	U	ug/Kg	P378519	
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378519	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.45	U	ug/Kg	P378519	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.23	U	ug/Kg	P378519	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378519	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378519	MS
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378519	
2155958	SM 2540 G (20th)	% Solid**	91.1		%	P378936	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 13:24

Field ID: SB-22 (0.5-2)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155913	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378519	
		Perfluorodecanoic acid (PFDA)**	0.11	U	ug/Kg	P378519	
		Perfluorododecanoic acid (PFDoA)**	0.11	U	ug/Kg	P378519	
		Perfluoroheptanoic acid (PFHpA)**	0.12	I	ug/Kg	P378519	
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P378519	MS
		Perfluorohexanoic acid (PFHxA)**	0.15	I	ug/Kg	P378519	
		Perfluorononanoic acid (PFNA)**	0.11	U	ug/Kg	P378519	
		Perfluorooctanesulfonic acid (PFOS)**	1.4		ug/Kg	P378519	
		Perfluorooctanoic acid (PFOA)**	0.21	I	ug/Kg	P378519	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378519	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378519	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378519	
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378519	
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378519	
		Perfluoropentanoic acid (PFPeA)**	0.44	U	ug/Kg	P378519	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P378519	
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378519	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.44	U	ug/Kg	P378519	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.22	U	ug/Kg	P378519	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378519	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378519	MS
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378519	
2155959	SM 2540 G (20th)	% Solid**	92.8		%	P378936	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 13:26

Field ID: SB-22 (2-4)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155914	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378519	
		Perfluorodecanoic acid (PFDA)**	0.11	U	ug/Kg	P378519	
		Perfluorododecanoic acid (PFDoA)**	0.11	U	ug/Kg	P378519	
		Perfluoroheptanoic acid (PFHpA)**	0.11	U	ug/Kg	P378519	
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P378519	MS
		Perfluorohexanoic acid (PFHxA)**	0.11	U	ug/Kg	P378519	
		Perfluorononanoic acid (PFNA)**	0.11	U	ug/Kg	P378519	
		Perfluorooctanesulfonic acid (PFOS)**	0.40	I	ug/Kg	P378519	
		Perfluorooctanoic acid (PFOA)**	0.11	U	ug/Kg	P378519	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378519	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378519	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378519	
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378519	
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378519	
		Perfluoropentanoic acid (PFPeA)**	0.44	U	ug/Kg	P378519	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P378519	
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378519	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.44	U	ug/Kg	P378519	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.22	U	ug/Kg	P378519	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378519	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378519	MS
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378519	
2155960	SM 2540 G (20th)	% Solid**	93.5		%	P378936	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 13:28

Field ID: SB-22 (4-5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155915	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P378519	
		Perfluorodecanoic acid (PFDA)**	0.12	U	ug/Kg	P378519	
		Perfluorododecanoic acid (PFDoA)**	0.12	U	ug/Kg	P378519	
		Perfluoroheptanoic acid (PFHpA)**	0.12	U	ug/Kg	P378519	
		Perfluorohexanesulfonic acid (PFHxS)**	0.12	U	ug/Kg	P378519	MS
		Perfluorohexanoic acid (PFHxA)**	0.12	U	ug/Kg	P378519	
		Perfluorononanoic acid (PFNA)**	0.12	U	ug/Kg	P378519	
		Perfluorooctanesulfonic acid (PFOS)**	0.30	I	ug/Kg	P378519	
		Perfluorooctanoic acid (PFOA)**	0.12	U	ug/Kg	P378519	
		Perfluorotetradecanoic acid (PFTeA)**	0.12	U	ug/Kg	P378519	
		Perfluorotridecanoic acid (PFTriA)**	0.12	U	ug/Kg	P378519	
		Perfluoroundecanoic acid (PFUnA)**	0.12	U	ug/Kg	P378519	
		N-Me perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378519	
		N-Et perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378519	
		Perfluoropentanoic acid (PFPeA)**	0.48	U	ug/Kg	P378519	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.24	U	ug/Kg	P378519	
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	U	ug/Kg	P378519	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.48	U	ug/Kg	P378519	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.24	U	ug/Kg	P378519	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P378519	
		Perfluorononanesulfonic acid (PFNS)**	0.12	U	ug/Kg	P378519	MS
		Perfluorodecanesulfonic acid (PFDS)**	0.12	U	ug/Kg	P378519	
2155961	SM 2540 G (20th)	% Solid**	88.5		%	P378936	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 14:00

Field ID: SB-1 (2-4)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155916	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378519	
		Perfluorodecanoic acid (PFDA)**	0.31	I	ug/Kg	P378519	
		Perfluorododecanoic acid (PFDoA)**	0.18	I	ug/Kg	P378519	
		Perfluoroheptanoic acid (PFHpA)**	3.0		ug/Kg	P378519	
		Perfluorohexanesulfonic acid (PFHxS)**	0.16	I	ug/Kg	P378519	MS
		Perfluorohexanoic acid (PFHxA)**	3.3		ug/Kg	P378519	
		Perfluorononanoic acid (PFNA)**	0.68		ug/Kg	P378519	
		Perfluorooctanesulfonic acid (PFOS)**	3.0		ug/Kg	P378519	
		Perfluorooctanoic acid (PFOA)**	5.5		ug/Kg	P378519	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378519	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378519	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378519	
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378519	
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378519	
		Perfluoropentanoic acid (PFPeA)**	7.9		ug/Kg	P378519	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.23	U	ug/Kg	P378519	
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378519	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	18		ug/Kg	P378519	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	10		ug/Kg	P378519	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378519	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378519	MS
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378519	
2155962	SM 2540 G (20th)	% Solid**	91.9		%	P378936	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 14:04

Field ID: SB-1 (4-5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155917	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.13	U	ug/Kg	P378519	
		Perfluorodecanoic acid (PFDA)**	0.13	U	ug/Kg	P378519	
		Perfluorododecanoic acid (PFDoA)**	0.13	U	ug/Kg	P378519	
		Perfluoroheptanoic acid (PFHpA)**	1.4		ug/Kg	P378519	
		Perfluorohexanesulfonic acid (PFHxS)**	0.13	U	ug/Kg	P378519	MS
		Perfluorohexanoic acid (PFHxA)**	1.8		ug/Kg	P378519	
		Perfluorononanoic acid (PFNA)**	0.16	I	ug/Kg	P378519	
		Perfluorooctanesulfonic acid (PFOS)**	0.40	I	ug/Kg	P378519	
		Perfluorooctanoic acid (PFOA)**	0.94		ug/Kg	P378519	
		Perfluorotetradecanoic acid (PFTeA)**	0.13	U	ug/Kg	P378519	
		Perfluorotridecanoic acid (PFTriA)**	0.13	U	ug/Kg	P378519	
		Perfluoroundecanoic acid (PFUnA)**	0.13	U	ug/Kg	P378519	
		N-Me perfluorooctanesulfonamidoAc acid**	0.13	U	ug/Kg	P378519	
		N-Et perfluorooctanesulfonamidoAc acid**	0.13	U	ug/Kg	P378519	
		Perfluoropentanoic acid (PFPeA)**	2.9		ug/Kg	P378519	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.25	U	ug/Kg	P378519	
		Perfluoropentanesulfonic acid (PFPeS)**	0.13	U	ug/Kg	P378519	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	6.8		ug/Kg	P378519	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.35	I	ug/Kg	P378519	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.13	U	ug/Kg	P378519	
		Perfluorononanesulfonic acid (PFNS)**	0.13	U	ug/Kg	P378519	MS
		Perfluorodecanesulfonic acid (PFDS)**	0.13	U	ug/Kg	P378519	
2155963	SM 2540 G (20th)	% Solid**	84.8		%	P378936	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 13:50

Field ID: SB-2 (2-4)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155918	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanoic acid (PFDA)**	0.11	U	ug/Kg	P378520	
		Perfluorododecanoic acid (PFDoA)**	0.11	U	ug/Kg	P378520	
		Perfluoroheptanoic acid (PFHpA)**	2.5		ug/Kg	P378520	
		Perfluorohexanesulfonic acid (PFHxS)**	0.15	I	ug/Kg	P378520	
		Perfluorohexanoic acid (PFHxA)**	3.1		ug/Kg	P378520	
		Perfluorononanoic acid (PFNA)**	0.28	I	ug/Kg	P378520	
		Perfluorooctanesulfonic acid (PFOS)**	4.7		ug/Kg	P378520	
		Perfluorooctanoic acid (PFOA)**	3.8	J	ug/Kg	P378520	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378520	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378520	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378520	
		N-Me perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P378520	
		N-Et perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P378520	
		Perfluoropentanoic acid (PFPeA)**	6.3		ug/Kg	P378520	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.21	UJ	ug/Kg	P378520	MS, RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378520	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	9.2		ug/Kg	P378520	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	1.2	I J	ug/Kg	P378520	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378520	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378520	
2155964	SM 2540 G (20th)	% Solid**	94.1		%	P378936	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 13:52

Field ID: SB-2 (4-5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155919	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanoic acid (PFDA)**	0.11	U	ug/Kg	P378520	
		Perfluorododecanoic acid (PFDoA)**	0.11	U	ug/Kg	P378520	
		Perfluoroheptanoic acid (PFHpA)**	0.92		ug/Kg	P378520	
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P378520	
		Perfluorohexanoic acid (PFHxA)**	3.7		ug/Kg	P378520	
		Perfluorononanoic acid (PFNA)**	0.29	I	ug/Kg	P378520	
		Perfluorooctanesulfonic acid (PFOS)**	1.3		ug/Kg	P378520	
		Perfluorooctanoic acid (PFOA)**	0.68		ug/Kg	P378520	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378520	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378520	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378520	
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378520	
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378520	
		Perfluoropentanoic acid (PFPeA)**	5.5		ug/Kg	P378520	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P378520	MS, RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378520	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	14		ug/Kg	P378520	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	1.5	I	ug/Kg	P378520	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378520	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378520	
2155965	SM 2540 G (20th)	% Solid**	86.4		%	P378936	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 09:25

Field ID: EQB-4

Matrix: W-EQPMT-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155949	EPA 8321B	Perfluorooctanoic acid (PFOA)**	1.0	U	ng/L	P378769	MS, RPD
		Perfluorooctanesulfonic acid (PFOS)**	2.0	U	ng/L	P378769	MS, RPD
		Perfluorobutanesulfonic acid (PFBS)**	0.40	U	ng/L	P378769	MS
		Perfluorodecanoic acid (PFDA)**	1.0	U	ng/L	P378769	RPD
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P378769	
		Perfluoroheptanoic acid (PFHpA)**	2.0	U	ng/L	P378769	MS, RPD
		Perfluorohexanesulfonic acid (PFHxS)**	0.40	U	ng/L	P378769	MS
		Perfluorohexanoic acid (PFHxA)**	2.0	U	ng/L	P378769	MS, RPD
		Perfluorononanoic acid (PFNA)**	1.0	U	ng/L	P378769	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P378769	RPD
		Perfluorotridecanoic acid (PFTriA)**	0.40	U	ng/L	P378769	RPD
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P378769	
		N-Me perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P378769	RPD
		N-Et perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P378769	
		Perfluoropentanoic acid (PFPeA)**	4.0	U	ng/L	P378769	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.0	U	ng/L	P378769	MS
		Perfluoropentanesulfonic acid (PFPeS)**	0.40	U	ng/L	P378769	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	4.0	U	ng/L	P378769	MS, RPD
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	2.0	U	ng/L	P378769	RPD
		Perfluoroheptanesulfonic acid (PFHpS)**	0.40	U	ng/L	P378769	
		Perfluorononanesulfonic acid (PFNS)**	0.40	U	ng/L	P378769	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P378769	

Sample Location: PBSC

Collection Date/Time: 02/04/2020 09:45

Field ID: SB-12 (0-0.5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155920	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanoic acid (PFDA)**	0.68		ug/Kg	P378520	
		Perfluorododecanoic acid (PFDoA)**	0.18	I	ug/Kg	P378520	
		Perfluoroheptanoic acid (PFHpA)**	0.48		ug/Kg	P378520	
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P378520	
		Perfluorohexanoic acid (PFHxA)**	0.26	I	ug/Kg	P378520	
		Perfluorononanoic acid (PFNA)**	1.6		ug/Kg	P378520	
		Perfluorooctanesulfonic acid (PFOS)**	1.0		ug/Kg	P378520	
		Perfluorooctanoic acid (PFOA)**	0.53		ug/Kg	P378520	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378520	
		Perfluorotridecanoic acid (PFTriA)**	0.12	I	ug/Kg	P378520	
		Perfluoroundecanoic acid (PFUnA)**	0.71		ug/Kg	P378520	
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378520	
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378520	
		Perfluoropentanoic acid (PFPeA)**	0.52	I	ug/Kg	P378520	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P378520	MS, RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378520	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.43	U	ug/Kg	P378520	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.42	I	ug/Kg	P378520	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378520	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378520	
2155967	SM 2540 G (20th)	% Solid**	93.8	A	%	P378937	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 09:55

Field ID: SB-12 (0.5-2)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155921	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.14	U	ug/Kg	P378520	
		Perfluorodecanoic acid (PFDA)**	0.28	I	ug/Kg	P378520	
		Perfluorododecanoic acid (PFDoA)**	0.14	U	ug/Kg	P378520	
		Perfluoroheptanoic acid (PFHpA)**	1.6		ug/Kg	P378520	
		Perfluorohexanesulfonic acid (PFHxS)**	0.22	I	ug/Kg	P378520	
		Perfluorohexanoic acid (PFHxA)**	0.75		ug/Kg	P378520	
		Perfluorononanoic acid (PFNA)**	1.6		ug/Kg	P378520	
		Perfluorooctanesulfonic acid (PFOS)**	2.2		ug/Kg	P378520	
		Perfluorooctanoic acid (PFOA)**	1.5		ug/Kg	P378520	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.14	U	ug/Kg	P378520	
		Perfluorotridecanoic acid (PFTriA)**	0.14	U	ug/Kg	P378520	
		Perfluoroundecanoic acid (PFUnA)**	0.16	I	ug/Kg	P378520	
		N-Me perfluorooctanesulfonamidoAcid**	0.14	U	ug/Kg	P378520	
		N-Et perfluorooctanesulfonamidoAcid**	0.14	U	ug/Kg	P378520	
		Perfluoropentanoic acid (PFPeA)**	2.0	I	ug/Kg	P378520	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.27	U	ug/Kg	P378520	MS, RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.14	U	ug/Kg	P378520	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.55	U	ug/Kg	P378520	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.27	U	ug/Kg	P378520	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.14	U	ug/Kg	P378520	
		Perfluorononanesulfonic acid (PFNS)**	0.14	U	ug/Kg	P378520	
		Perfluorodecanesulfonic acid (PFDS)**	0.14	U	ug/Kg	P378520	
2155968	SM 2540 G (20th)	% Solid**	81.4		%	P378937	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 09:57

Field ID: SB-12 (2-4)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155922	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P378520	
		Perfluorodecanoic acid (PFDA)**	0.12	U	ug/Kg	P378520	
		Perfluorododecanoic acid (PFDoA)**	0.12	U	ug/Kg	P378520	
		Perfluoroheptanoic acid (PFHpA)**	1.1		ug/Kg	P378520	
		Perfluorohexanesulfonic acid (PFHxS)**	0.16	I	ug/Kg	P378520	
		Perfluorohexanoic acid (PFHxA)**	0.62		ug/Kg	P378520	
		Perfluorononanoic acid (PFNA)**	0.17	I	ug/Kg	P378520	
		Perfluorooctanesulfonic acid (PFOS)**	2.0		ug/Kg	P378520	
		Perfluorooctanoic acid (PFOA)**	0.57		ug/Kg	P378520	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.12	U	ug/Kg	P378520	
		Perfluorotridecanoic acid (PFTriA)**	0.12	U	ug/Kg	P378520	
		Perfluoroundecanoic acid (PFUnA)**	0.12	U	ug/Kg	P378520	
		N-Me perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P378520	
		N-Et perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P378520	
		Perfluoropentanoic acid (PFPeA)**	1.1	I	ug/Kg	P378520	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.24	U	ug/Kg	P378520	MS, RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	U	ug/Kg	P378520	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.47	U	ug/Kg	P378520	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.24	U	ug/Kg	P378520	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P378520	
		Perfluorononanesulfonic acid (PFNS)**	0.12	U	ug/Kg	P378520	
		Perfluorodecanesulfonic acid (PFDS)**	0.12	U	ug/Kg	P378520	
2155969	SM 2540 G (20th)	% Solid**	88.2		%	P378937	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 09:55

Field ID: SB-12 (4-5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155970	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.14	U	ug/Kg	P378520	
		Perfluorodecanoic acid (PFDA)**	0.14	U	ug/Kg	P378520	
		Perfluorododecanoic acid (PFDoA)**	0.14	U	ug/Kg	P378520	
		Perfluoroheptanoic acid (PFHpA)**	0.45	I	ug/Kg	P378520	
		Perfluorohexanesulfonic acid (PFHxS)**	0.16	I	ug/Kg	P378520	
		Perfluorohexanoic acid (PFHxA)**	0.43	I	ug/Kg	P378520	
		Perfluorononanoic acid (PFNA)**	0.14	U	ug/Kg	P378520	
		Perfluorooctanesulfonic acid (PFOS)**	1.9		ug/Kg	P378520	
		Perfluorooctanoic acid (PFOA)**	0.14	I	ug/Kg	P378520	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.14	U	ug/Kg	P378520	
		Perfluorotridecanoic acid (PFTriA)**	0.14	U	ug/Kg	P378520	
		Perfluoroundecanoic acid (PFUnA)**	0.14	U	ug/Kg	P378520	
		N-Me perfluorooctanesulfonamidoAcid**	0.14	U	ug/Kg	P378520	
		N-Et perfluorooctanesulfonamidoAcid**	0.14	U	ug/Kg	P378520	
		Perfluoropentanoic acid (PFPeA)**	0.71	I	ug/Kg	P378520	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.28	U	ug/Kg	P378520	MS, RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.14	U	ug/Kg	P378520	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.56	U	ug/Kg	P378520	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.28	U	ug/Kg	P378520	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.14	U	ug/Kg	P378520	
		Perfluorononanesulfonic acid (PFNS)**	0.14	U	ug/Kg	P378520	
		Perfluorodecanesulfonic acid (PFDS)**	0.14	U	ug/Kg	P378520	
2155990	SM 2540 G (20th)	% Solid**	79.5		%	P378937	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 10:20

Field ID: SB-13 (0-0.5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155971	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanoic acid (PFDA)**	0.95		ug/Kg	P378520	
		Perfluorododecanoic acid (PFDoA)**	0.23	I	ug/Kg	P378520	
		Perfluoroheptanoic acid (PFHpA)**	0.67		ug/Kg	P378520	
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P378520	
		Perfluorohexanoic acid (PFHxA)**	0.35	I	ug/Kg	P378520	
		Perfluorononanoic acid (PFNA)**	1.7		ug/Kg	P378520	
		Perfluorooctanesulfonic acid (PFOS)**	0.90		ug/Kg	P378520	
		Perfluorooctanoic acid (PFOA)**	1.3		ug/Kg	P378520	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378520	
		Perfluorotridecanoic acid (PFTriA)**	0.11	I	ug/Kg	P378520	
		Perfluoroundecanoic acid (PFUnA)**	0.63		ug/Kg	P378520	
		N-Me perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P378520	
		N-Et perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P378520	
		Perfluoropentanoic acid (PFPeA)**	0.76	I	ug/Kg	P378520	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P378520	MS, RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378520	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.44	U	ug/Kg	P378520	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	1.5		ug/Kg	P378520	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378520	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378520	
2155991	SM 2540 G (20th)	% Solid**	92.6		%	P378937	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 10:22

Field ID: SB-13 (0.5-2)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155972	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanoic acid (PFDA)**	0.83		ug/Kg	P378520	
		Perfluorododecanoic acid (PFDoA)**	0.71		ug/Kg	P378520	
		Perfluoroheptanoic acid (PFHpA)**	1.8		ug/Kg	P378520	
		Perfluorohexanesulfonic acid (PFHxS)**	0.19	I	ug/Kg	P378520	
		Perfluorohexanoic acid (PFHxA)**	1.4		ug/Kg	P378520	
		Perfluorononanoic acid (PFNA)**	1.1		ug/Kg	P378520	
		Perfluorooctanesulfonic acid (PFOS)**	5.4		ug/Kg	P378520	
		Perfluorooctanoic acid (PFOA)**	1.1		ug/Kg	P378520	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.28	I	ug/Kg	P378520	
		Perfluorotridecanoic acid (PFTriA)**	0.16	I	ug/Kg	P378520	
		Perfluoroundecanoic acid (PFUnA)**	0.32	I	ug/Kg	P378520	
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378520	
		N-Et perfluorooctanesulfonamidoAcid**	0.32	I	ug/Kg	P378520	
		Perfluoropentanoic acid (PFPeA)**	2.5		ug/Kg	P378520	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P378520	MS, RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378520	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.45	U	ug/Kg	P378520	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.22	U	ug/Kg	P378520	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378520	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanesulfonic acid (PFDS)**	1.0		ug/Kg	P378520	
2155992	SM 2540 G (20th)	% Solid**	92.7		%	P378937	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 10:24

Field ID: SB-13 (2-4)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155973	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanoic acid (PFDA)**	0.17	I	ug/Kg	P378520	
		Perfluorododecanoic acid (PFDoA)**	0.11	I	ug/Kg	P378520	
		Perfluoroheptanoic acid (PFHpA)**	0.95		ug/Kg	P378520	
		Perfluorohexanesulfonic acid (PFHxS)**	0.17	I	ug/Kg	P378520	
		Perfluorohexanoic acid (PFHxA)**	0.83		ug/Kg	P378520	
		Perfluorononanoic acid (PFNA)**	0.23	I	ug/Kg	P378520	
		Perfluorooctanesulfonic acid (PFOS)**	3.4		ug/Kg	P378520	
		Perfluorooctanoic acid (PFOA)**	0.81		ug/Kg	P378520	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378520	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378520	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378520	
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378520	
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378520	
		Perfluoropentanoic acid (PFPeA)**	1.3	I	ug/Kg	P378520	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P378520	MS, RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378520	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.43	U	ug/Kg	P378520	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.22	U	ug/Kg	P378520	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378520	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378520	
2155993	SM 2540 G (20th)	% Solid**	93.1		%	P378937	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 10:26

Field ID: SB-13 (4-5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155974	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.13	U	ug/Kg	P378520	
		Perfluorodecanoic acid (PFDA)**	0.14	I	ug/Kg	P378520	
		Perfluorododecanoic acid (PFDoA)**	0.23	I	ug/Kg	P378520	
		Perfluoroheptanoic acid (PFHpA)**	0.86		ug/Kg	P378520	
		Perfluorohexanesulfonic acid (PFHxS)**	0.13	U	ug/Kg	P378520	
		Perfluorohexanoic acid (PFHxA)**	1.1		ug/Kg	P378520	
		Perfluorononanoic acid (PFNA)**	0.14	I	ug/Kg	P378520	
		Perfluorooctanesulfonic acid (PFOS)**	2.1		ug/Kg	P378520	
		Perfluorooctanoic acid (PFOA)**	0.47	I	ug/Kg	P378520	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.13	U	ug/Kg	P378520	
		Perfluorotridecanoic acid (PFTriA)**	0.14	I	ug/Kg	P378520	
		Perfluoroundecanoic acid (PFUnA)**	0.13	U	ug/Kg	P378520	
		N-Me perfluorooctanesulfonamidoAcid**	0.13	U	ug/Kg	P378520	
		N-Et perfluorooctanesulfonamidoAcid**	0.13	U	ug/Kg	P378520	
		Perfluoropentanoic acid (PFPeA)**	1.9	I	ug/Kg	P378520	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.26	U	ug/Kg	P378520	MS, RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.13	U	ug/Kg	P378520	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.51	U	ug/Kg	P378520	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.26	U	ug/Kg	P378520	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.13	U	ug/Kg	P378520	
		Perfluorononanesulfonic acid (PFNS)**	0.13	U	ug/Kg	P378520	
		Perfluorodecanesulfonic acid (PFDS)**	0.13	U	ug/Kg	P378520	
2155994	SM 2540 G (20th)	% Solid**	84.1		%	P378937	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 10:45

Field ID: SB-14 (0-0.5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155975	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanoic acid (PFDA)**	3.3		ug/Kg	P378520	
		Perfluorododecanoic acid (PFDoA)**	1.1		ug/Kg	P378520	
		Perfluoroheptanoic acid (PFHpA)**	1.2		ug/Kg	P378520	
		Perfluorohexanesulfonic acid (PFHxS)**	2.3		ug/Kg	P378520	
		Perfluorohexanoic acid (PFHxA)**	0.73		ug/Kg	P378520	
		Perfluorononanoic acid (PFNA)**	1.6		ug/Kg	P378520	
		Perfluorooctanesulfonic acid (PFOS)**	13		ug/Kg	P378520	
		Perfluorooctanoic acid (PFOA)**	1.5		ug/Kg	P378520	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.30	I	ug/Kg	P378520	
		Perfluorotridecanoic acid (PFTriA)**	0.30	I	ug/Kg	P378520	
		Perfluoroundecanoic acid (PFUnA)**	4.2		ug/Kg	P378520	
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378520	
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378520	
		Perfluoropentanoic acid (PFPeA)**	2.2		ug/Kg	P378520	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.23	U	ug/Kg	P378520	MS, RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378520	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.46	U	ug/Kg	P378520	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	3.9		ug/Kg	P378520	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.13	I	ug/Kg	P378520	
		Perfluorononanesulfonic acid (PFNS)**	1.8		ug/Kg	P378520	
		Perfluorodecanesulfonic acid (PFDS)**	1.1		ug/Kg	P378520	
2155995	SM 2540 G (20th)	% Solid**	90.9		%	P378937	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 10:47

Field ID: SB-14 (0.5-2)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155976	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P378520	
		Perfluorodecanoic acid (PFDA)**	2.2		ug/Kg	P378520	
		Perfluorododecanoic acid (PFDoA)**	0.19	I	ug/Kg	P378520	
		Perfluoroheptanoic acid (PFHpA)**	1.6		ug/Kg	P378520	
		Perfluorohexanesulfonic acid (PFHxS)**	4.4		ug/Kg	P378520	
		Perfluorohexanoic acid (PFHxA)**	1.5		ug/Kg	P378520	
		Perfluorononanoic acid (PFNA)**	3.7		ug/Kg	P378520	
		Perfluorooctanesulfonic acid (PFOS)**	67		ug/Kg	P378520	
		Perfluorooctanoic acid (PFOA)**	1.6		ug/Kg	P378520	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.12	U	ug/Kg	P378520	
		Perfluorotridecanoic acid (PFTriA)**	0.12	U	ug/Kg	P378520	
		Perfluoroundecanoic acid (PFUnA)**	0.57		ug/Kg	P378520	
		N-Me perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378520	
		N-Et perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378520	
		Perfluoropentanoic acid (PFPeA)**	1.9	I	ug/Kg	P378520	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.25	U	ug/Kg	P378520	MS, RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	U	ug/Kg	P378520	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.50	U	ug/Kg	P378520	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.25	I	ug/Kg	P378520	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.31	I	ug/Kg	P378520	
		Perfluorononanesulfonic acid (PFNS)**	0.31	I	ug/Kg	P378520	
		Perfluorodecanesulfonic acid (PFDS)**	0.12	U	ug/Kg	P378520	
2155996	SM 2540 G (20th)	% Solid**	84.7		%	P378937	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 10:49

Field ID: SB-14 (2-4)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155977	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanoic acid (PFDA)**	0.16	I	ug/Kg	P378520	
		Perfluorododecanoic acid (PFDoA)**	0.11	U	ug/Kg	P378520	
		Perfluoroheptanoic acid (PFHpA)**	0.37	I	ug/Kg	P378520	
		Perfluorohexanesulfonic acid (PFHxS)**	1.3		ug/Kg	P378520	
		Perfluorohexanoic acid (PFHxA)**	0.32	I	ug/Kg	P378520	
		Perfluorononanoic acid (PFNA)**	1.2		ug/Kg	P378520	
		Perfluorooctanesulfonic acid (PFOS)**	35		ug/Kg	P378520	
		Perfluorooctanoic acid (PFOA)**	0.83		ug/Kg	P378520	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378520	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378520	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378520	
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378520	
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378520	
		Perfluoropentanoic acid (PFPeA)**	0.45	I	ug/Kg	P378520	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P378520	MS, RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378520	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.44	U	ug/Kg	P378520	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.22	U	ug/Kg	P378520	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.25	I	ug/Kg	P378520	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378520	
2155997	SM 2540 G (20th)	% Solid**	93.7	A	%	P378938	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 09:15

Field ID: Drilling Water

Matrix: WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155988	EPA 8321B	Perfluorooctanoic acid (PFOA)**	1.0	U	ng/L	P378769	MS, RPD
		Perfluorooctanesulfonic acid (PFOS)**	2.0	U	ng/L	P378769	MS, RPD
		Perfluorobutanesulfonic acid (PFBS)**	0.40	U	ng/L	P378769	MS
		Perfluorodecanoic acid (PFDA)**	1.0	U	ng/L	P378769	RPD
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P378769	
		Perfluoroheptanoic acid (PFHpA)**	2.0	U	ng/L	P378769	MS, RPD
		Perfluorohexanesulfonic acid (PFHxS)**	0.40	U	ng/L	P378769	MS
		Perfluorohexanoic acid (PFHxA)**	2.0	U	ng/L	P378769	MS, RPD
		Perfluorononanoic acid (PFNA)**	1.0	U	ng/L	P378769	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P378769	RPD
		Perfluorotridecanoic acid (PFTriA)**	0.40	U	ng/L	P378769	RPD
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P378769	
		N-Me perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P378769	RPD
		N-Et perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P378769	
		Perfluoropentanoic acid (PFPeA)**	4.0	U	ng/L	P378769	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.0	U	ng/L	P378769	MS
		Perfluoropentanesulfonic acid (PFPeS)**	0.40	U	ng/L	P378769	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	4.0	U	ng/L	P378769	MS, RPD
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	2.0	U	ng/L	P378769	RPD
		Perfluoroheptanesulfonic acid (PFHpS)**	0.40	U	ng/L	P378769	
		Perfluorononanesulfonic acid (PFNS)**	0.40	U	ng/L	P378769	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P378769	

Sample Location: PBSC

Collection Date/Time: 02/05/2020 10:00

Field ID: EQB-5

Matrix: W-EQPMT-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155989	EPA 8321B	Perfluorooctanoic acid (PFOA)**	1.0	U	ng/L	P378769	MS, RPD
		Perfluorooctanesulfonic acid (PFOS)**	2.0	U	ng/L	P378769	MS, RPD
		Perfluorobutanesulfonic acid (PFBS)**	0.40	U	ng/L	P378769	MS
		Perfluorodecanoic acid (PFDA)**	1.0	U	ng/L	P378769	RPD
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P378769	
		Perfluoroheptanoic acid (PFHpA)**	2.0	U	ng/L	P378769	MS, RPD
		Perfluorohexanesulfonic acid (PFHxS)**	0.40	U	ng/L	P378769	MS
		Perfluorohexanoic acid (PFHxA)**	2.0	U	ng/L	P378769	MS, RPD
		Perfluorononanoic acid (PFNA)**	1.0	U	ng/L	P378769	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P378769	RPD
		Perfluorotridecanoic acid (PFTriA)**	0.40	U	ng/L	P378769	RPD
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P378769	
		N-Me perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P378769	RPD
		N-Et perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P378769	
		Perfluoropentanoic acid (PFPeA)**	4.0	U	ng/L	P378769	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.0	U	ng/L	P378769	MS
		Perfluoropentanesulfonic acid (PFPeS)**	0.40	U	ng/L	P378769	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	4.0	U	ng/L	P378769	MS, RPD
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	2.0	U	ng/L	P378769	RPD
		Perfluoroheptanesulfonic acid (PFHpS)**	0.40	U	ng/L	P378769	
		Perfluorononanesulfonic acid (PFNS)**	0.40	U	ng/L	P378769	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P378769	

Sample Location: PBSC

Collection Date/Time: 02/05/2020 09:40

Field ID: SB-6 (2-3)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155978	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanoic acid (PFDA)**	0.11	U	ug/Kg	P378520	
		Perfluorododecanoic acid (PFDoA)**	0.11	U	ug/Kg	P378520	
		Perfluoroheptanoic acid (PFHpA)**	0.15	I	ug/Kg	P378520	
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P378520	
		Perfluorohexanoic acid (PFHxA)**	0.12	I	ug/Kg	P378520	
		Perfluorononanoic acid (PFNA)**	0.31	I	ug/Kg	P378520	
		Perfluorooctanesulfonic acid (PFOS)**	1.5		ug/Kg	P378520	
		Perfluorooctanoic acid (PFOA)**	0.11	U	ug/Kg	P378520	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378520	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378520	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378520	
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378520	
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378520	
		Perfluoropentanoic acid (PFPeA)**	0.46	U	ug/Kg	P378520	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.23	U	ug/Kg	P378520	MS, RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378520	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.46	U	ug/Kg	P378520	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.23	U	ug/Kg	P378520	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378520	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378520	
2156000	SM 2540 G (20th)	% Solid**	90.9		%	P378938	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 09:10

Field ID: SB-9 (0-0.5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155979	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P378520	
		Perfluorodecanoic acid (PFDA)**	0.71		ug/Kg	P378520	
		Perfluorododecanoic acid (PFDoA)**	0.36	I	ug/Kg	P378520	
		Perfluoroheptanoic acid (PFHpA)**	0.56		ug/Kg	P378520	
		Perfluorohexanesulfonic acid (PFHxS)**	0.12	U	ug/Kg	P378520	
		Perfluorohexanoic acid (PFHxA)**	0.52		ug/Kg	P378520	
		Perfluorononanoic acid (PFNA)**	0.52		ug/Kg	P378520	
		Perfluorooctanesulfonic acid (PFOS)**	1.3		ug/Kg	P378520	
		Perfluorooctanoic acid (PFOA)**	0.37	I	ug/Kg	P378520	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.12	U	ug/Kg	P378520	
		Perfluorotridecanoic acid (PFTriA)**	0.12	U	ug/Kg	P378520	
		Perfluoroundecanoic acid (PFUnA)**	0.37	I	ug/Kg	P378520	
		N-Me perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378520	
		N-Et perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378520	
		Perfluoropentanoic acid (PFPeA)**	0.98	I	ug/Kg	P378520	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.25	U	ug/Kg	P378520	MS, RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	U	ug/Kg	P378520	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.49	U	ug/Kg	P378520	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.25	U	ug/Kg	P378520	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P378520	
		Perfluorononanesulfonic acid (PFNS)**	0.12	U	ug/Kg	P378520	
		Perfluorodecanesulfonic acid (PFDS)**	0.12	U	ug/Kg	P378520	
2156001	SM 2540 G (20th)	% Solid**	86.9		%	P378938	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 09:12

Field ID: SB-9 (0.5-2)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155980	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanoic acid (PFDA)**	0.13	I	ug/Kg	P378520	
		Perfluorododecanoic acid (PFDoA)**	0.11	U	ug/Kg	P378520	
		Perfluoroheptanoic acid (PFHpA)**	0.42	I	ug/Kg	P378520	
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P378520	
		Perfluorohexanoic acid (PFHxA)**	0.28	I	ug/Kg	P378520	
		Perfluorononanoic acid (PFNA)**	0.35	I	ug/Kg	P378520	
		Perfluorooctanesulfonic acid (PFOS)**	2.1		ug/Kg	P378520	
		Perfluorooctanoic acid (PFOA)**	0.22	I	ug/Kg	P378520	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378520	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378520	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378520	
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378520	
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378520	
		Perfluoropentanoic acid (PFPeA)**	0.49	I	ug/Kg	P378520	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.23	U	ug/Kg	P378520	MS, RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378520	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.46	U	ug/Kg	P378520	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.23	U	ug/Kg	P378520	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378520	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378520	
2156002	SM 2540 G (20th)	% Solid**	90.2		%	P378938	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 09:14

Field ID: SB-9 (2-4)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155981	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanoic acid (PFDA)**	0.11	U	ug/Kg	P378520	
		Perfluorododecanoic acid (PFDoA)**	0.11	U	ug/Kg	P378520	
		Perfluoroheptanoic acid (PFHpA)**	0.22	I	ug/Kg	P378520	
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P378520	
		Perfluorohexanoic acid (PFHxA)**	0.12	I	ug/Kg	P378520	
		Perfluorononanoic acid (PFNA)**	0.16	I	ug/Kg	P378520	
		Perfluorooctanesulfonic acid (PFOS)**	3.4		ug/Kg	P378520	
		Perfluorooctanoic acid (PFOA)**	0.12	I	ug/Kg	P378520	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378520	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378520	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378520	
		N-Me perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P378520	
		N-Et perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P378520	
		Perfluoropentanoic acid (PFPeA)**	0.50	I	ug/Kg	P378520	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P378520	MS, RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378520	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.43	U	ug/Kg	P378520	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.22	U	ug/Kg	P378520	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378520	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378520	
2156003	SM 2540 G (20th)	% Solid**	93.6		%	P378938	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 09:16

Field ID: SB-9 (4-5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155982	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P378520	
		Perfluorodecanoic acid (PFDA)**	0.12	U	ug/Kg	P378520	
		Perfluorododecanoic acid (PFDoA)**	0.12	U	ug/Kg	P378520	
		Perfluoroheptanoic acid (PFHpA)**	0.12	U	ug/Kg	P378520	
		Perfluorohexanesulfonic acid (PFHxS)**	0.12	U	ug/Kg	P378520	
		Perfluorohexanoic acid (PFHxA)**	0.12	U	ug/Kg	P378520	
		Perfluorononanoic acid (PFNA)**	0.12	U	ug/Kg	P378520	
		Perfluorooctanesulfonic acid (PFOS)**	0.69	I	ug/Kg	P378520	
		Perfluorooctanoic acid (PFOA)**	0.12	U	ug/Kg	P378520	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.12	U	ug/Kg	P378520	
		Perfluorotridecanoic acid (PFTriA)**	0.12	U	ug/Kg	P378520	
		Perfluoroundecanoic acid (PFUnA)**	0.12	U	ug/Kg	P378520	
		N-Me perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378520	
		N-Et perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378520	
		Perfluoropentanoic acid (PFPeA)**	0.49	U	ug/Kg	P378520	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.24	U	ug/Kg	P378520	MS, RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	U	ug/Kg	P378520	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.49	U	ug/Kg	P378520	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.24	U	ug/Kg	P378520	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P378520	
		Perfluorononanesulfonic acid (PFNS)**	0.12	U	ug/Kg	P378520	
		Perfluorodecanesulfonic acid (PFDS)**	0.12	U	ug/Kg	P378520	
2156004	SM 2540 G (20th)	% Solid**	86.4		%	P378938	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 10:25

Field ID: SB-10 (0-0.5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155983	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanoic acid (PFDA)**	0.11	U	ug/Kg	P378520	
		Perfluorododecanoic acid (PFDoA)**	0.11	U	ug/Kg	P378520	
		Perfluoroheptanoic acid (PFHpA)**	0.53	U	ug/Kg	P378520	
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P378520	
		Perfluorohexanoic acid (PFHxA)**	0.11	U	ug/Kg	P378520	
		Perfluorononanoic acid (PFNA)**	0.53	U	ug/Kg	P378520	
		Perfluorooctanesulfonic acid (PFOS)**	1.1	U	ug/Kg	P378520	
		Perfluorooctanoic acid (PFOA)**	0.53	U	ug/Kg	P378520	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378520	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378520	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378520	
		N-Me perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P378520	
		N-Et perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P378520	
		Perfluoropentanoic acid (PFPeA)**	2.1	U	ug/Kg	P378520	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.21	U	ug/Kg	P378520	MS, RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378520	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.42	U	ug/Kg	P378520	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.21	U	ug/Kg	P378520	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378520	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378520	
2156005	SM 2540 G (20th)	% Solid**	95.6		%	P378938	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample. MDL for some parameters elevated due to matrix interference.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 10:27

Field ID: SB-10 (0.5-2)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155984	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanoic acid (PFDA)**	0.53	U	ug/Kg	P378520	
		Perfluorododecanoic acid (PFDoA)**	0.53	U	ug/Kg	P378520	
		Perfluoroheptanoic acid (PFHpA)**	0.53	U	ug/Kg	P378520	
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P378520	
		Perfluorohexanoic acid (PFHxA)**	0.11	U	ug/Kg	P378520	
		Perfluorononanoic acid (PFNA)**	0.53	U	ug/Kg	P378520	
		Perfluorooctanesulfonic acid (PFOS)**	2.0	I	ug/Kg	P378520	
		Perfluorooctanoic acid (PFOA)**	0.11	U	ug/Kg	P378520	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378520	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378520	
		Perfluoroundecanoic acid (PFUnA)**	0.53	U	ug/Kg	P378520	
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378520	
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378520	
		Perfluoropentanoic acid (PFPeA)**	2.1	U	ug/Kg	P378520	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.21	U	ug/Kg	P378520	MS, RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378520	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.42	U	ug/Kg	P378520	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.21	U	ug/Kg	P378520	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378520	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378520	
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378520	
2156006	SM 2540 G (20th)	% Solid**	95.7		%	P378938	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample. MDL for some parameters elevated due to matrix interference.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 10:29

Field ID: SB-10 (2-4)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155985	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378524	
		Perfluorodecanoic acid (PFDA)**	0.15	I	ug/Kg	P378524	
		Perfluorododecanoic acid (PFDoA)**	0.16	I	ug/Kg	P378524	
		Perfluoroheptanoic acid (PFHpA)**	0.23	I	ug/Kg	P378524	
		Perfluorohexanesulfonic acid (PFHxS)**	0.24	I	ug/Kg	P378524	
		Perfluorohexanoic acid (PFHxA)**	0.21	U	ug/Kg	P378524	
		Perfluorononanoic acid (PFNA)**	0.13	I	ug/Kg	P378524	
		Perfluorooctanesulfonic acid (PFOS)**	6.8		ug/Kg	P378524	
		Perfluorooctanoic acid (PFOA)**	0.13	I	ug/Kg	P378524	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378524	
		Perfluorotridecanoic acid (PFTriA)**	0.32	I	ug/Kg	P378524	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378524	
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378524	
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378524	
		Perfluoropentanoic acid (PFPeA)**	0.63	I	ug/Kg	P378524	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.21	U	ug/Kg	P378524	
		Perfluoropentanesulfonic acid (PFPeS)**	0.23	I	ug/Kg	P378524	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.43	U	ug/Kg	P378524	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.21	UJ	ug/Kg	P378524	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378524	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378524	
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378524	
2156007	SM 2540 G (20th)	% Solid**	93.6		%	P378938	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 10:31

Field ID: SB-10 (4-4.5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155986	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.13	U	ug/Kg	P378524	
		Perfluorodecanoic acid (PFDA)**	0.13	U	ug/Kg	P378524	
		Perfluorododecanoic acid (PFDoA)**	0.13	U	ug/Kg	P378524	
		Perfluoroheptanoic acid (PFHpA)**	0.25	U	ug/Kg	P378524	
		Perfluorohexanesulfonic acid (PFHxS)**	0.16	I	ug/Kg	P378524	
		Perfluorohexanoic acid (PFHxA)**	0.25	U	ug/Kg	P378524	
		Perfluorononanoic acid (PFNA)**	0.13	U	ug/Kg	P378524	
		Perfluorooctanesulfonic acid (PFOS)**	5.2		ug/Kg	P378524	
		Perfluorooctanoic acid (PFOA)**	0.13	U	ug/Kg	P378524	
		Perfluorotetradecanoic acid (PFTeA)**	0.13	U	ug/Kg	P378524	
		Perfluorotridecanoic acid (PFTriA)**	0.36	I	ug/Kg	P378524	
		Perfluoroundecanoic acid (PFUnA)**	0.13	U	ug/Kg	P378524	
		N-Me perfluorooctanesulfonamidoAc acid**	0.13	U	ug/Kg	P378524	
		N-Et perfluorooctanesulfonamidoAc acid**	0.13	U	ug/Kg	P378524	
		Perfluoropentanoic acid (PFPeA)**	0.65	I	ug/Kg	P378524	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.25	U	ug/Kg	P378524	
		Perfluoropentanesulfonic acid (PFPeS)**	0.27	I	ug/Kg	P378524	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.50	U	ug/Kg	P378524	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.25	U	ug/Kg	P378524	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.13	U	ug/Kg	P378524	
		Perfluorononanesulfonic acid (PFNS)**	0.13	U	ug/Kg	P378524	
		Perfluorodecanesulfonic acid (PFDS)**	0.13	U	ug/Kg	P378524	
2156008	SM 2540 G (20th)	% Solid**	84.5		%	P378938	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 09:50

Field ID: SB-11 (0-0.5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155987	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.10	U	ug/Kg	P378524	
		Perfluorodecanoic acid (PFDA)**	0.17	I	ug/Kg	P378524	
		Perfluorododecanoic acid (PFDoA)**	0.19	I	ug/Kg	P378524	
		Perfluoroheptanoic acid (PFHpA)**	0.21	U	ug/Kg	P378524	
		Perfluorohexanesulfonic acid (PFHxS)**	0.10	U	ug/Kg	P378524	
		Perfluorohexanoic acid (PFHxA)**	0.21	U	ug/Kg	P378524	
		Perfluorononanoic acid (PFNA)**	0.10	U	ug/Kg	P378524	
		Perfluorooctanesulfonic acid (PFOS)**	0.55	I	ug/Kg	P378524	
		Perfluorooctanoic acid (PFOA)**	0.10	U	ug/Kg	P378524	
		Perfluorotetradecanoic acid (PFTeA)**	0.10	U	ug/Kg	P378524	
		Perfluorotridecanoic acid (PFTriA)**	0.33	I	ug/Kg	P378524	
		Perfluoroundecanoic acid (PFUnA)**	0.12	I	ug/Kg	P378524	
		N-Me perfluorooctanesulfonamidoAcid**	0.10	U	ug/Kg	P378524	
		N-Et perfluorooctanesulfonamidoAcid**	0.10	U	ug/Kg	P378524	
		Perfluoropentanoic acid (PFPeA)**	0.48	I	ug/Kg	P378524	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.21	U	ug/Kg	P378524	
		Perfluoropentanesulfonic acid (PFPeS)**	0.22	I	ug/Kg	P378524	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.42	U	ug/Kg	P378524	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.21	U	ug/Kg	P378524	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.10	U	ug/Kg	P378524	
		Perfluorononanesulfonic acid (PFNS)**	0.10	U	ug/Kg	P378524	
		Perfluorodecanesulfonic acid (PFDS)**	0.10	U	ug/Kg	P378524	
2156009	SM 2540 G (20th)	% Solid**	95.1	A	%	P379009	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 09:52

Field ID: SB-11 (0.5-2)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156010	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378524	
		Perfluorodecanoic acid (PFDA)**	0.16	I	ug/Kg	P378524	
		Perfluorododecanoic acid (PFDoA)**	0.19	I	ug/Kg	P378524	
		Perfluoroheptanoic acid (PFHpA)**	0.22	U	ug/Kg	P378524	
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P378524	
		Perfluorohexanoic acid (PFHxA)**	0.22	U	ug/Kg	P378524	
		Perfluorononanoic acid (PFNA)**	0.11	U	ug/Kg	P378524	
		Perfluorooctanesulfonic acid (PFOS)**	0.66	I	ug/Kg	P378524	
		Perfluorooctanoic acid (PFOA)**	0.11	U	ug/Kg	P378524	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378524	
		Perfluorotridecanoic acid (PFTriA)**	0.35	I	ug/Kg	P378524	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378524	
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378524	
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378524	
		Perfluoropentanoic acid (PFPeA)**	0.45	I	ug/Kg	P378524	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P378524	
		Perfluoropentanesulfonic acid (PFPeS)**	0.23	I	ug/Kg	P378524	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.43	U	ug/Kg	P378524	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.22	U	ug/Kg	P378524	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378524	
Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378524			
Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378524			
2156030	SM 2540 G (20th)	% Solid**	94.5		%	P379009	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 09:54

Field ID: SB-11 (2-4)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156011	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P378524	
		Perfluorodecanoic acid (PFDA)**	0.12	U	ug/Kg	P378524	
		Perfluorododecanoic acid (PFDoA)**	0.14	I	ug/Kg	P378524	
		Perfluoroheptanoic acid (PFHpA)**	0.29	I	ug/Kg	P378524	
		Perfluorohexanesulfonic acid (PFHxS)**	0.38	I	ug/Kg	P378524	
		Perfluorohexanoic acid (PFHxA)**	0.27	I	ug/Kg	P378524	
		Perfluorononanoic acid (PFNA)**	0.18	I	ug/Kg	P378524	
		Perfluorooctanesulfonic acid (PFOS)**	7.3		ug/Kg	P378524	
		Perfluorooctanoic acid (PFOA)**	0.21	I	ug/Kg	P378524	
		Perfluorotetradecanoic acid (PFTeA)**	0.12	U	ug/Kg	P378524	
		Perfluorotridecanoic acid (PFTriA)**	0.34	I	ug/Kg	P378524	
		Perfluoroundecanoic acid (PFUnA)**	0.12	U	ug/Kg	P378524	
		N-Me perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378524	
		N-Et perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378524	
		Perfluoropentanoic acid (PFPeA)**	0.75	I	ug/Kg	P378524	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.23	U	ug/Kg	P378524	
		Perfluoropentanesulfonic acid (PFPeS)**	0.25	I	ug/Kg	P378524	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.46	U	ug/Kg	P378524	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.23	U	ug/Kg	P378524	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P378524	
		Perfluorononanesulfonic acid (PFNS)**	0.12	U	ug/Kg	P378524	
		Perfluorodecanesulfonic acid (PFDS)**	0.12	U	ug/Kg	P378524	
2156031	SM 2540 G (20th)	% Solid**	88.7		%	P379009	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 09:56

Field ID: SB-11 (4-5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156012	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.13	U	ug/Kg	P378524	
		Perfluorodecanoic acid (PFDA)**	0.13	U	ug/Kg	P378524	
		Perfluorododecanoic acid (PFDoA)**	0.20	I	ug/Kg	P378524	
		Perfluoroheptanoic acid (PFHpA)**	0.25	U	ug/Kg	P378524	
		Perfluorohexanesulfonic acid (PFHxS)**	0.13	U	ug/Kg	P378524	
		Perfluorohexanoic acid (PFHxA)**	0.25	U	ug/Kg	P378524	
		Perfluorononanoic acid (PFNA)**	0.13	U	ug/Kg	P378524	
		Perfluorooctanesulfonic acid (PFOS)**	4.1		ug/Kg	P378524	
		Perfluorooctanoic acid (PFOA)**	0.13	U	ug/Kg	P378524	
		Perfluorotetradecanoic acid (PFTeA)**	0.13	U	ug/Kg	P378524	
		Perfluorotridecanoic acid (PFTriA)**	0.37	I	ug/Kg	P378524	
		Perfluoroundecanoic acid (PFUnA)**	0.13	U	ug/Kg	P378524	
		N-Me perfluorooctanesulfonamidoAcid**	0.13	U	ug/Kg	P378524	
		N-Et perfluorooctanesulfonamidoAcid**	0.13	U	ug/Kg	P378524	
		Perfluoropentanoic acid (PFPeA)**	0.59	I	ug/Kg	P378524	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.25	U	ug/Kg	P378524	
		Perfluoropentanesulfonic acid (PFPeS)**	0.27	I	ug/Kg	P378524	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.51	U	ug/Kg	P378524	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.25	U	ug/Kg	P378524	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.13	U	ug/Kg	P378524	
		Perfluorononanesulfonic acid (PFNS)**	0.13	U	ug/Kg	P378524	
		Perfluorodecanesulfonic acid (PFDS)**	0.13	U	ug/Kg	P378524	
2156032	SM 2540 G (20th)	% Solid**	84.9		%	P379009	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 11:00

Field ID: SB-20 (0-0.5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156013	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.10	U	ug/Kg	P378524	
		Perfluorodecanoic acid (PFDA)**	0.10	U	ug/Kg	P378524	
		Perfluorododecanoic acid (PFDoA)**	0.16	I	ug/Kg	P378524	
		Perfluoroheptanoic acid (PFHpA)**	0.21	U	ug/Kg	P378524	
		Perfluorohexanesulfonic acid (PFHxS)**	0.10	U	ug/Kg	P378524	
		Perfluorohexanoic acid (PFHxA)**	0.21	U	ug/Kg	P378524	
		Perfluorononanoic acid (PFNA)**	0.10	U	ug/Kg	P378524	
		Perfluorooctanesulfonic acid (PFOS)**	0.21	U	ug/Kg	P378524	
		Perfluorooctanoic acid (PFOA)**	0.10	U	ug/Kg	P378524	
		Perfluorotetradecanoic acid (PFTeA)**	0.10	U	ug/Kg	P378524	
		Perfluorotridecanoic acid (PFTriA)**	0.30	I	ug/Kg	P378524	
		Perfluoroundecanoic acid (PFUnA)**	0.10	U	ug/Kg	P378524	
		N-Me perfluorooctanesulfonamidoAcid**	0.10	U	ug/Kg	P378524	
		N-Et perfluorooctanesulfonamidoAcid**	0.10	U	ug/Kg	P378524	
		Perfluoropentanoic acid (PFPeA)**	0.50	I	ug/Kg	P378524	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.21	U	ug/Kg	P378524	
		Perfluoropentanesulfonic acid (PFPeS)**	0.23	I	ug/Kg	P378524	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.42	U	ug/Kg	P378524	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.21	U	ug/Kg	P378524	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.10	U	ug/Kg	P378524	
		Perfluorononanesulfonic acid (PFNS)**	0.10	U	ug/Kg	P378524	
		Perfluorodecanesulfonic acid (PFDS)**	0.10	U	ug/Kg	P378524	
2156033	SM 2540 G (20th)	% Solid**	96.0		%	P379009	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 11:02

Field ID: SB-20 (0.5-2)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156014	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.10	U	ug/Kg	P378524	
		Perfluorodecanoic acid (PFDA)**	0.10	U	ug/Kg	P378524	
		Perfluorododecanoic acid (PFDoA)**	0.14	I	ug/Kg	P378524	
		Perfluoroheptanoic acid (PFHpA)**	0.37	I	ug/Kg	P378524	
		Perfluorohexanesulfonic acid (PFHxS)**	1.0		ug/Kg	P378524	
		Perfluorohexanoic acid (PFHxA)**	0.40	I	ug/Kg	P378524	
		Perfluorononanoic acid (PFNA)**	0.10	U	ug/Kg	P378524	
		Perfluorooctanesulfonic acid (PFOS)**	2.4		ug/Kg	P378524	
		Perfluorooctanoic acid (PFOA)**	0.16	I	ug/Kg	P378524	
		Perfluorotetradecanoic acid (PFTeA)**	0.10	U	ug/Kg	P378524	
		Perfluorotridecanoic acid (PFTriA)**	0.31	I	ug/Kg	P378524	
		Perfluoroundecanoic acid (PFUnA)**	0.10	U	ug/Kg	P378524	
		N-Me perfluorooctanesulfonamidoAcid**	0.10	U	ug/Kg	P378524	
		N-Et perfluorooctanesulfonamidoAcid**	0.10	U	ug/Kg	P378524	
		Perfluoropentanoic acid (PFPeA)**	0.58	I	ug/Kg	P378524	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.21	U	ug/Kg	P378524	
		Perfluoropentanesulfonic acid (PFPeS)**	0.27	I	ug/Kg	P378524	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.42	U	ug/Kg	P378524	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.21	U	ug/Kg	P378524	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.10	U	ug/Kg	P378524	
		Perfluorononanesulfonic acid (PFNS)**	0.10	U	ug/Kg	P378524	
		Perfluorodecanesulfonic acid (PFDS)**	0.10	U	ug/Kg	P378524	
2156034	SM 2540 G (20th)	% Solid**	95.4		%	P379009	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 11:04

Field ID: SB-20 (2-4)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156015	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378524	
		Perfluorodecanoic acid (PFDA)**	0.11	U	ug/Kg	P378524	
		Perfluorododecanoic acid (PFDoA)**	0.12	I	ug/Kg	P378524	
		Perfluoroheptanoic acid (PFHpA)**	0.24	I	ug/Kg	P378524	
		Perfluorohexanesulfonic acid (PFHxS)**	0.64		ug/Kg	P378524	
		Perfluorohexanoic acid (PFHxA)**	0.29	I	ug/Kg	P378524	
		Perfluorononanoic acid (PFNA)**	0.11	U	ug/Kg	P378524	
		Perfluorooctanesulfonic acid (PFOS)**	1.7		ug/Kg	P378524	
		Perfluorooctanoic acid (PFOA)**	0.13	I	ug/Kg	P378524	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378524	
		Perfluorotridecanoic acid (PFTriA)**	0.32	I	ug/Kg	P378524	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378524	
		N-Me perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P378524	
		N-Et perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P378524	
		Perfluoropentanoic acid (PFPeA)**	0.58	I	ug/Kg	P378524	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.21	U	ug/Kg	P378524	
		Perfluoropentanesulfonic acid (PFPeS)**	0.25	I	ug/Kg	P378524	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.43	U	ug/Kg	P378524	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.21	U	ug/Kg	P378524	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378524	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378524	
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378524	
2156035	SM 2540 G (20th)	% Solid**	94.8		%	P379009	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 11:06

Field ID: SB-20 (4-4.5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156016	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.15	U	ug/Kg	P378524	
		Perfluorodecanoic acid (PFDA)**	0.36	I	ug/Kg	P378524	
		Perfluorododecanoic acid (PFDoA)**	0.31	I	ug/Kg	P378524	
		Perfluoroheptanoic acid (PFHpA)**	0.42	I	ug/Kg	P378524	
		Perfluorohexanesulfonic acid (PFHxS)**	0.56	I	ug/Kg	P378524	
		Perfluorohexanoic acid (PFHxA)**	0.69	I	ug/Kg	P378524	
		Perfluorononanoic acid (PFNA)**	0.15	U	ug/Kg	P378524	
		Perfluorooctanesulfonic acid (PFOS)**	7.6		ug/Kg	P378524	
		Perfluorooctanoic acid (PFOA)**	0.18	I	ug/Kg	P378524	
		Perfluorotetradecanoic acid (PFTeA)**	0.15	U	ug/Kg	P378524	
		Perfluorotridecanoic acid (PFTriA)**	0.47	I	ug/Kg	P378524	
		Perfluoroundecanoic acid (PFUnA)**	0.15	U	ug/Kg	P378524	
		N-Me perfluorooctanesulfonamidoAcid**	0.15	U	ug/Kg	P378524	
		N-Et perfluorooctanesulfonamidoAcid**	0.15	U	ug/Kg	P378524	
		Perfluoropentanoic acid (PFPeA)**	1.1	I	ug/Kg	P378524	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.30	U	ug/Kg	P378524	
		Perfluoropentanesulfonic acid (PFPeS)**	0.34	I	ug/Kg	P378524	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.60	U	ug/Kg	P378524	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.30	U	ug/Kg	P378524	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.15	U	ug/Kg	P378524	
		Perfluorononanesulfonic acid (PFNS)**	0.15	U	ug/Kg	P378524	
		Perfluorodecanesulfonic acid (PFDS)**	0.15	U	ug/Kg	P378524	
2156036	SM 2540 G (20th)	% Solid**	75.9		%	P379009	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 12:00

Field ID: SB-21 (0-0.5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156017	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.10	U	ug/Kg	P378524	
		Perfluorodecanoic acid (PFDA)**	0.10	U	ug/Kg	P378524	
		Perfluorododecanoic acid (PFDoA)**	0.10	U	ug/Kg	P378524	
		Perfluoroheptanoic acid (PFHpA)**	0.21	U	ug/Kg	P378524	
		Perfluorohexanesulfonic acid (PFHxS)**	0.10	U	ug/Kg	P378524	
		Perfluorohexanoic acid (PFHxA)**	0.21	U	ug/Kg	P378524	
		Perfluorononanoic acid (PFNA)**	0.10	U	ug/Kg	P378524	
		Perfluorooctanesulfonic acid (PFOS)**	0.21	U	ug/Kg	P378524	
		Perfluorooctanoic acid (PFOA)**	0.10	U	ug/Kg	P378524	
		Perfluorotetradecanoic acid (PFTeA)**	0.10	U	ug/Kg	P378524	
		Perfluorotridecanoic acid (PFTriA)**	0.10	U	ug/Kg	P378524	
		Perfluoroundecanoic acid (PFUnA)**	0.10	U	ug/Kg	P378524	
		N-Me perfluorooctanesulfonamidoAcid**	0.10	U	ug/Kg	P378524	
		N-Et perfluorooctanesulfonamidoAcid**	0.10	U	ug/Kg	P378524	
		Perfluoropentanoic acid (PFPeA)**	0.41	U	ug/Kg	P378524	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.21	U	ug/Kg	P378524	
		Perfluoropentanesulfonic acid (PFPeS)**	0.10	U	ug/Kg	P378524	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.41	U	ug/Kg	P378524	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.21	U	ug/Kg	P378524	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.10	U	ug/Kg	P378524	
		Perfluorononanesulfonic acid (PFNS)**	0.10	U	ug/Kg	P378524	
		Perfluorodecanesulfonic acid (PFDS)**	0.10	U	ug/Kg	P378524	
2156037	SM 2540 G (20th)	% Solid**	95.9		%	P379009	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 12:02

Field ID: SB-21 (0.5-2)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156018	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.10	U	ug/Kg	P378524	
		Perfluorodecanoic acid (PFDA)**	0.10	U	ug/Kg	P378524	
		Perfluorododecanoic acid (PFDoA)**	0.12	I	ug/Kg	P378524	
		Perfluoroheptanoic acid (PFHpA)**	0.20	U	ug/Kg	P378524	
		Perfluorohexanesulfonic acid (PFHxS)**	0.10	U	ug/Kg	P378524	
		Perfluorohexanoic acid (PFHxA)**	0.20	U	ug/Kg	P378524	
		Perfluorononanoic acid (PFNA)**	0.10	U	ug/Kg	P378524	
		Perfluorooctanesulfonic acid (PFOS)**	0.20	U	ug/Kg	P378524	
		Perfluorooctanoic acid (PFOA)**	0.10	U	ug/Kg	P378524	
		Perfluorotetradecanoic acid (PFTeA)**	0.10	U	ug/Kg	P378524	
		Perfluorotridecanoic acid (PFTriA)**	0.30	I	ug/Kg	P378524	
		Perfluoroundecanoic acid (PFUnA)**	0.10	U	ug/Kg	P378524	
		N-Me perfluorooctanesulfonamidoAc acid**	0.10	U	ug/Kg	P378524	
		N-Et perfluorooctanesulfonamidoAc acid**	0.10	U	ug/Kg	P378524	
		Perfluoropentanoic acid (PFPeA)**	0.50	I	ug/Kg	P378524	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.20	U	ug/Kg	P378524	
		Perfluoropentanesulfonic acid (PFPeS)**	0.21	I	ug/Kg	P378524	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.40	U	ug/Kg	P378524	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.20	U	ug/Kg	P378524	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.10	U	ug/Kg	P378524	
		Perfluorononanesulfonic acid (PFNS)**	0.10	U	ug/Kg	P378524	
		Perfluorodecanesulfonic acid (PFDS)**	0.10	U	ug/Kg	P378524	
2156038	SM 2540 G (20th)	% Solid**	97.8		%	P379009	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 12:04

Field ID: SB-21 (2-4)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156019	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.10	U	ug/Kg	P378524	
		Perfluorodecanoic acid (PFDA)**	0.10	U	ug/Kg	P378524	
		Perfluorododecanoic acid (PFDoA)**	0.10	U	ug/Kg	P378524	
		Perfluoroheptanoic acid (PFHpA)**	0.21	U	ug/Kg	P378524	
		Perfluorohexanesulfonic acid (PFHxS)**	0.10	U	ug/Kg	P378524	
		Perfluorohexanoic acid (PFHxA)**	0.21	U	ug/Kg	P378524	
		Perfluorononanoic acid (PFNA)**	0.10	U	ug/Kg	P378524	
		Perfluorooctanesulfonic acid (PFOS)**	0.21	U	ug/Kg	P378524	
		Perfluorooctanoic acid (PFOA)**	0.10	U	ug/Kg	P378524	
		Perfluorotetradecanoic acid (PFTeA)**	0.10	U	ug/Kg	P378524	
		Perfluorotridecanoic acid (PFTriA)**	0.10	U	ug/Kg	P378524	
		Perfluoroundecanoic acid (PFUnA)**	0.10	U	ug/Kg	P378524	
		N-Me perfluorooctanesulfonamidoAcid**	0.10	U	ug/Kg	P378524	
		N-Et perfluorooctanesulfonamidoAcid**	0.10	U	ug/Kg	P378524	
		Perfluoropentanoic acid (PFPeA)**	0.41	U	ug/Kg	P378524	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.21	U	ug/Kg	P378524	
		Perfluoropentanesulfonic acid (PFPeS)**	0.10	U	ug/Kg	P378524	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.41	U	ug/Kg	P378524	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.21	U	ug/Kg	P378524	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.10	U	ug/Kg	P378524	
		Perfluorononanesulfonic acid (PFNS)**	0.10	U	ug/Kg	P378524	
		Perfluorodecanesulfonic acid (PFDS)**	0.10	U	ug/Kg	P378524	
2156039	SM 2540 G (20th)	% Solid**	96.4	A	%	P379010	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 12:06

Field ID: SB-21 (4-5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156020	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P378524	
		Perfluorodecanoic acid (PFDA)**	0.12	U	ug/Kg	P378524	
		Perfluorododecanoic acid (PFDoA)**	0.18	I	ug/Kg	P378524	
		Perfluoroheptanoic acid (PFHpA)**	0.24	U	ug/Kg	P378524	
		Perfluorohexanesulfonic acid (PFHxS)**	0.12	U	ug/Kg	P378524	
		Perfluorohexanoic acid (PFHxA)**	0.24	U	ug/Kg	P378524	
		Perfluorononanoic acid (PFNA)**	0.12	U	ug/Kg	P378524	
		Perfluorooctanesulfonic acid (PFOS)**	0.76	I	ug/Kg	P378524	
		Perfluorooctanoic acid (PFOA)**	0.12	U	ug/Kg	P378524	
		Perfluorotetradecanoic acid (PFTeA)**	0.12	U	ug/Kg	P378524	
		Perfluorotridecanoic acid (PFTriA)**	0.36	I	ug/Kg	P378524	
		Perfluoroundecanoic acid (PFUnA)**	0.12	U	ug/Kg	P378524	
		N-Me perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P378524	
		N-Et perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P378524	
		Perfluoropentanoic acid (PFPeA)**	0.53	I	ug/Kg	P378524	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.24	U	ug/Kg	P378524	
		Perfluoropentanesulfonic acid (PFPeS)**	0.26	I	ug/Kg	P378524	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.49	U	ug/Kg	P378524	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.24	U	ug/Kg	P378524	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P378524	
		Perfluorononanesulfonic acid (PFNS)**	0.12	U	ug/Kg	P378524	
		Perfluorodecanesulfonic acid (PFDS)**	0.12	U	ug/Kg	P378524	
2156040	SM 2540 G (20th)	% Solid**	86.8		%	P379010	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 11:30

Field ID: SB-23 (0-0.5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156021	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378524	
		Perfluorodecanoic acid (PFDA)**	0.21	I	ug/Kg	P378524	
		Perfluorododecanoic acid (PFDoA)**	0.13	I	ug/Kg	P378524	
		Perfluoroheptanoic acid (PFHpA)**	0.22	U	ug/Kg	P378524	
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P378524	
		Perfluorohexanoic acid (PFHxA)**	0.22	U	ug/Kg	P378524	
		Perfluorononanoic acid (PFNA)**	0.18	I	ug/Kg	P378524	
		Perfluorooctanesulfonic acid (PFOS)**	0.90		ug/Kg	P378524	
		Perfluorooctanoic acid (PFOA)**	0.13	I	ug/Kg	P378524	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378524	
		Perfluorotridecanoic acid (PFTriA)**	0.11	I	ug/Kg	P378524	
		Perfluoroundecanoic acid (PFUnA)**	0.12	I	ug/Kg	P378524	
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378524	
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378524	
		Perfluoropentanoic acid (PFPeA)**	0.44	U	ug/Kg	P378524	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P378524	
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378524	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.44	U	ug/Kg	P378524	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.22	U	ug/Kg	P378524	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378524	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378524	
		Perfluorodecanesulfonic acid (PFDS)**	0.14	I	ug/Kg	P378524	
2156041	SM 2540 G (20th)	% Solid**	93.1		%	P379010	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 11:05

Field ID: SB-7 (2-4)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156022	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P378524	
		Perfluorodecanoic acid (PFDA)**	0.12	U	ug/Kg	P378524	
		Perfluorododecanoic acid (PFDoA)**	0.28	I	ug/Kg	P378524	
		Perfluoroheptanoic acid (PFHpA)**	1.4		ug/Kg	P378524	
		Perfluorohexanesulfonic acid (PFHxS)**	1.6		ug/Kg	P378524	
		Perfluorohexanoic acid (PFHxA)**	1.3		ug/Kg	P378524	
		Perfluorononanoic acid (PFNA)**	0.12	U	ug/Kg	P378524	
		Perfluorooctanesulfonic acid (PFOS)**	4.6		ug/Kg	P378524	
		Perfluorooctanoic acid (PFOA)**	0.66		ug/Kg	P378524	
		Perfluorotetradecanoic acid (PFTeA)**	0.12	U	ug/Kg	P378524	
		Perfluorotridecanoic acid (PFTriA)**	0.37	I	ug/Kg	P378524	
		Perfluoroundecanoic acid (PFUnA)**	0.12	U	ug/Kg	P378524	
		N-Me perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378524	
		N-Et perfluorooctanesulfonamidoAcid**	0.12	U	ug/Kg	P378524	
		Perfluoropentanoic acid (PFPeA)**	1.2	I	ug/Kg	P378524	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.24	U	ug/Kg	P378524	
		Perfluoropentanesulfonic acid (PFPeS)**	0.27	I	ug/Kg	P378524	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.48	U	ug/Kg	P378524	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.24	U	ug/Kg	P378524	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P378524	
		Perfluorononanesulfonic acid (PFNS)**	0.12	U	ug/Kg	P378524	
		Perfluorodecanesulfonic acid (PFDS)**	0.14	I	ug/Kg	P378524	
2156042	SM 2540 G (20th)	% Solid**	88.2		%	P379010	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 11:07

Field ID: SB-7 (4-5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156023	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.13	U	ug/Kg	P378524	
		Perfluorodecanoic acid (PFDA)**	0.13	U	ug/Kg	P378524	
		Perfluorododecanoic acid (PFDoA)**	0.23	I	ug/Kg	P378524	
		Perfluoroheptanoic acid (PFHpA)**	0.69	I	ug/Kg	P378524	
		Perfluorohexanesulfonic acid (PFHxS)**	4.1		ug/Kg	P378524	
		Perfluorohexanoic acid (PFHxA)**	0.33	I	ug/Kg	P378524	
		Perfluorononanoic acid (PFNA)**	0.13	U	ug/Kg	P378524	
		Perfluorooctanesulfonic acid (PFOS)**	1.7		ug/Kg	P378524	
		Perfluorooctanoic acid (PFOA)**	0.36	I	ug/Kg	P378524	
		Perfluorotetradecanoic acid (PFTeA)**	0.13	U	ug/Kg	P378524	
		Perfluorotridecanoic acid (PFTriA)**	0.39	I	ug/Kg	P378524	
		Perfluoroundecanoic acid (PFUnA)**	0.13	U	ug/Kg	P378524	
		N-Me perfluorooctanesulfonamidoAcid**	0.13	U	ug/Kg	P378524	
		N-Et perfluorooctanesulfonamidoAcid**	0.13	U	ug/Kg	P378524	
		Perfluoropentanoic acid (PFPeA)**	0.64	I	ug/Kg	P378524	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.26	U	ug/Kg	P378524	
		Perfluoropentanesulfonic acid (PFPeS)**	0.36	I	ug/Kg	P378524	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.52	U	ug/Kg	P378524	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.26	U	ug/Kg	P378524	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.13	U	ug/Kg	P378524	
		Perfluorononanesulfonic acid (PFNS)**	0.13	U	ug/Kg	P378524	
		Perfluorodecanesulfonic acid (PFDS)**	0.13	U	ug/Kg	P378524	
2156043	SM 2540 G (20th)	% Solid**	83.8		%	P379010	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 15:50

Field ID: FRB-2

Matrix: W-FRB

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156029	EPA 8321B	Perfluorooctanoic acid (PFOA)**	1.0	U	ng/L	P378769	MS, RPD
		Perfluorooctanesulfonic acid (PFOS)**	2.0	U	ng/L	P378769	MS, RPD
		Perfluorobutanesulfonic acid (PFBS)**	0.40	U	ng/L	P378769	MS
		Perfluorodecanoic acid (PFDA)**	1.0	U	ng/L	P378769	RPD
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P378769	
		Perfluoroheptanoic acid (PFHpA)**	2.0	U	ng/L	P378769	MS, RPD
		Perfluorohexanesulfonic acid (PFHxS)**	0.40	U	ng/L	P378769	MS
		Perfluorohexanoic acid (PFHxA)**	2.0	U	ng/L	P378769	MS, RPD
		Perfluorononanoic acid (PFNA)**	1.0	U	ng/L	P378769	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P378769	RPD
		Perfluorotridecanoic acid (PFTriA)**	0.40	U	ng/L	P378769	RPD
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P378769	
		N-Me perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P378769	RPD
		N-Et perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P378769	
		Perfluoropentanoic acid (PFPeA)**	4.0	U	ng/L	P378769	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.0	U	ng/L	P378769	MS
		Perfluoropentanesulfonic acid (PFPeS)**	0.40	U	ng/L	P378769	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	4.0	U	ng/L	P378769	MS, RPD
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	2.0	U	ng/L	P378769	RPD
		Perfluoroheptanesulfonic acid (PFHpS)**	0.40	U	ng/L	P378769	
		Perfluorononanesulfonic acid (PFNS)**	0.40	U	ng/L	P378769	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P378769	

Sample Location: PBSC

Collection Date/Time: 02/04/2020 15:45

Field ID: SB-18 (0-0.5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156024	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378524	
		Perfluorodecanoic acid (PFDA)**	1.2		ug/Kg	P378524	
		Perfluorododecanoic acid (PFDoA)**	0.66		ug/Kg	P378524	
		Perfluoroheptanoic acid (PFHpA)**	1.2		ug/Kg	P378524	
		Perfluorohexanesulfonic acid (PFHxS)**	1.9		ug/Kg	P378524	
		Perfluorohexanoic acid (PFHxA)**	0.76	I	ug/Kg	P378524	
		Perfluorononanoic acid (PFNA)**	0.73		ug/Kg	P378524	
		Perfluorooctanesulfonic acid (PFOS)**	6.0		ug/Kg	P378524	
		Perfluorooctanoic acid (PFOA)**	0.84		ug/Kg	P378524	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378524	
		Perfluorotridecanoic acid (PFTriA)**	0.37	I	ug/Kg	P378524	
		Perfluoroundecanoic acid (PFUnA)**	0.69		ug/Kg	P378524	
		N-Me perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P378524	
		N-Et perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P378524	
		Perfluoropentanoic acid (PFPeA)**	1.0	I	ug/Kg	P378524	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.23	U	ug/Kg	P378524	
		Perfluoropentanesulfonic acid (PFPeS)**	0.29	I	ug/Kg	P378524	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.45	U	ug/Kg	P378524	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.96		ug/Kg	P378524	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378524	
		Perfluorononanesulfonic acid (PFNS)**	0.43	I	ug/Kg	P378524	
		Perfluorodecanesulfonic acid (PFDS)**	0.30	I	ug/Kg	P378524	
2156045	SM 2540 G (20th)	% Solid**	91.3		%	P379010	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 15:47

Field ID: SB-18 (0.5-2)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156025	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378524	
		Perfluorodecanoic acid (PFDA)**	0.33	I	ug/Kg	P378524	
		Perfluorododecanoic acid (PFDoA)**	0.11	U	ug/Kg	P378524	
		Perfluoroheptanoic acid (PFHpA)**	1.0		ug/Kg	P378524	
		Perfluorohexanesulfonic acid (PFHxS)**	2.7		ug/Kg	P378524	
		Perfluorohexanoic acid (PFHxA)**	0.97		ug/Kg	P378524	
		Perfluorononanoic acid (PFNA)**	1.1		ug/Kg	P378524	
		Perfluorooctanesulfonic acid (PFOS)**	55		ug/Kg	P378524	
		Perfluorooctanoic acid (PFOA)**	1.3		ug/Kg	P378524	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378524	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378524	
		Perfluoroundecanoic acid (PFUnA)**	0.23	I	ug/Kg	P378524	
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378524	
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378524	
		Perfluoropentanoic acid (PFPeA)**	1.3	I	ug/Kg	P378524	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P378524	
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	I	ug/Kg	P378524	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.44	U	ug/Kg	P378524	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.22	U	ug/Kg	P378524	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.23	I	ug/Kg	P378524	
		Perfluorononanesulfonic acid (PFNS)**	0.12	I	ug/Kg	P378524	
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378524	
2156046	SM 2540 G (20th)	% Solid**	92.2		%	P379010	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 15:49

Field ID: SB-18 (2-4)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156026	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378524	
		Perfluorodecanoic acid (PFDA)**	0.11	U	ug/Kg	P378524	
		Perfluorododecanoic acid (PFDoA)**	0.11	U	ug/Kg	P378524	
		Perfluoroheptanoic acid (PFHpA)**	0.49	I	ug/Kg	P378524	
		Perfluorohexanesulfonic acid (PFHxS)**	1.2		ug/Kg	P378524	
		Perfluorohexanoic acid (PFHxA)**	0.22	U	ug/Kg	P378524	
		Perfluorononanoic acid (PFNA)**	0.45		ug/Kg	P378524	
		Perfluorooctanesulfonic acid (PFOS)**	20		ug/Kg	P378524	
		Perfluorooctanoic acid (PFOA)**	0.99		ug/Kg	P378524	
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378524	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378524	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378524	
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378524	
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378524	
		Perfluoropentanoic acid (PFPeA)**	0.44	U	ug/Kg	P378524	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P378524	
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378524	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.44	U	ug/Kg	P378524	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.22	U	ug/Kg	P378524	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.17	I	ug/Kg	P378524	
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378524	
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378524	
2156047	SM 2540 G (20th)	% Solid**	94.3		%	P379010	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/04/2020 15:51

Field ID: SB-18 (4-5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156027	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	UJ	ug/Kg	P378998	RPD
		Perfluorodecanoic acid (PFDA)**	0.15	I J	ug/Kg	P378998	RPD
		Perfluorododecanoic acid (PFDoA)**	0.12	UJ	ug/Kg	P378998	RPD
		Perfluoroheptanoic acid (PFHpA)**	0.24	UJ	ug/Kg	P378998	RPD
		Perfluorohexanesulfonic acid (PFHxS)**	0.41	I J	ug/Kg	P378998	RPD
		Perfluorohexanoic acid (PFHxA)**	0.24	UJ	ug/Kg	P378998	RPD
		Perfluorononanoic acid (PFNA)**	0.15	I J	ug/Kg	P378998	RPD
		Perfluorooctanesulfonic acid (PFOS)**	6.2	J	ug/Kg	P378998	RPD
		Perfluorooctanoic acid (PFOA)**	0.17	I J	ug/Kg	P378998	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.12	U	ug/Kg	P378998	
		Perfluorotridecanoic acid (PFTriA)**	0.12	U	ug/Kg	P378998	
		Perfluoroundecanoic acid (PFUnA)**	0.12	UJ	ug/Kg	P378998	RPD
		N-Me perfluorooctanesulfonamidoAc acid**	0.12	UJ	ug/Kg	P378998	RPD
		N-Et perfluorooctanesulfonamidoAc acid**	0.12	UJ	ug/Kg	P378998	RPD
		Perfluoropentanoic acid (PFPeA)**	0.64	I J	ug/Kg	P378998	MS, RPD
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.24	UJ	ug/Kg	P378998	RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	UJ	ug/Kg	P378998	RPD
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.49	UJ	ug/Kg	P378998	RPD
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.24	UJ	ug/Kg	P378998	RPD
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	UJ	ug/Kg	P378998	RPD
		Perfluorononanesulfonic acid (PFNS)**	0.12	UJ	ug/Kg	P378998	RPD
		Perfluorodecanesulfonic acid (PFDS)**	0.12	UJ	ug/Kg	P378998	RPD
2156048	SM 2540 G (20th)	% Solid**	86.7		%	P379010	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 11:32

Field ID: SB-23 (0.5-2)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156028	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorodecanoic acid (PFDA)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorododecanoic acid (PFDoA)**	0.11	U	ug/Kg	P378998	RPD
		Perfluoroheptanoic acid (PFHpA)**	0.24	I	ug/Kg	P378998	RPD
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorohexanoic acid (PFHxA)**	0.22	U	ug/Kg	P378998	RPD
		Perfluorononanoic acid (PFNA)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorooctanesulfonic acid (PFOS)**	0.93		ug/Kg	P378998	RPD
		Perfluorooctanoic acid (PFOA)**	0.15	I	ug/Kg	P378998	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378998	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378998	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378998	RPD
		N-Me perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P378998	RPD
		N-Et perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P378998	RPD
		Perfluoropentanoic acid (PFPeA)**	0.60	I	ug/Kg	P378998	MS, RPD
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P378998	RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378998	RPD
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.43	U	ug/Kg	P378998	RPD
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.22	U	ug/Kg	P378998	RPD
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378998	RPD
2156049	SM 2540 G (20th)	% Solid**	94.4		%	P379010	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 11:34

Field ID: SB-23 (2-4)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156050	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorodecanoic acid (PFDA)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorododecanoic acid (PFDoA)**	0.11	U	ug/Kg	P378998	RPD
		Perfluoroheptanoic acid (PFHpA)**	0.22	U	ug/Kg	P378998	RPD
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorohexanoic acid (PFHxA)**	0.22	U	ug/Kg	P378998	RPD
		Perfluorononanoic acid (PFNA)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorooctanesulfonic acid (PFOS)**	0.29	I	ug/Kg	P378998	RPD
		Perfluorooctanoic acid (PFOA)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378998	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378998	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378998	RPD
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378998	RPD
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378998	RPD
		Perfluoropentanoic acid (PFPeA)**	0.43	U	ug/Kg	P378998	MS, RPD
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.22	U	ug/Kg	P378998	RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378998	RPD
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.43	U	ug/Kg	P378998	RPD
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.22	U	ug/Kg	P378998	RPD
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378998	RPD
2156055	SM 2540 G (20th)	% Solid**	93.5	A	%	P379013	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 08:55

Field ID: SB-8 (0-0.5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156051	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorodecanoic acid (PFDA)**	0.96		ug/Kg	P378998	RPD
		Perfluorododecanoic acid (PFDoA)**	0.71		ug/Kg	P378998	RPD
		Perfluoroheptanoic acid (PFHpA)**	0.31	I	ug/Kg	P378998	RPD
		Perfluorohexanesulfonic acid (PFHxS)**	0.14	I	ug/Kg	P378998	RPD
		Perfluorohexanoic acid (PFHxA)**	0.52	I	ug/Kg	P378998	RPD
		Perfluorononanoic acid (PFNA)**	0.17	I	ug/Kg	P378998	RPD
		Perfluorooctanesulfonic acid (PFOS)**	0.80	I	ug/Kg	P378998	RPD
		Perfluorooctanoic acid (PFOA)**	0.22	I	ug/Kg	P378998	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.16	I	ug/Kg	P378998	
		Perfluorotridecanoic acid (PFTriA)**	0.15	I	ug/Kg	P378998	
		Perfluoroundecanoic acid (PFUnA)**	1.0		ug/Kg	P378998	RPD
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378998	RPD
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378998	RPD
		Perfluoropentanoic acid (PFPeA)**	0.89	I	ug/Kg	P378998	MS, RPD
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.23	U	ug/Kg	P378998	RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378998	RPD
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.46	U	ug/Kg	P378998	RPD
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.41	I	ug/Kg	P378998	RPD
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378998	RPD
2156056	SM 2540 G (20th)	% Solid**	89.8		%	P379013	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 08:57

Field ID: SB-8 (0.5-2)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156052	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.12	U	ug/Kg	P378998	RPD
		Perfluorodecanoic acid (PFDA)**	0.58		ug/Kg	P378998	RPD
		Perfluorododecanoic acid (PFDoA)**	0.12	U	ug/Kg	P378998	RPD
		Perfluoroheptanoic acid (PFHpA)**	0.45	I	ug/Kg	P378998	RPD
		Perfluorohexanesulfonic acid (PFHxS)**	0.14	I	ug/Kg	P378998	RPD
		Perfluorohexanoic acid (PFHxA)**	0.55	I	ug/Kg	P378998	RPD
		Perfluorononanoic acid (PFNA)**	0.65		ug/Kg	P378998	RPD
		Perfluorooctanesulfonic acid (PFOS)**	4.5		ug/Kg	P378998	RPD
		Perfluorooctanoic acid (PFOA)**	0.24	I	ug/Kg	P378998	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.12	U	ug/Kg	P378998	
		Perfluorotridecanoic acid (PFTriA)**	0.12	U	ug/Kg	P378998	
		Perfluoroundecanoic acid (PFUnA)**	0.16	I	ug/Kg	P378998	RPD
		N-Me perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P378998	RPD
		N-Et perfluorooctanesulfonamidoAc acid**	0.12	U	ug/Kg	P378998	RPD
		Perfluoropentanoic acid (PFPeA)**	0.97	I	ug/Kg	P378998	MS, RPD
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.23	U	ug/Kg	P378998	RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.12	U	ug/Kg	P378998	RPD
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.47	U	ug/Kg	P378998	RPD
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.23	U	ug/Kg	P378998	RPD
		Perfluoroheptanesulfonic acid (PFHpS)**	0.12	U	ug/Kg	P378998	RPD
		Perfluorononanesulfonic acid (PFNS)**	0.12	U	ug/Kg	P378998	RPD
		Perfluorodecanesulfonic acid (PFDS)**	0.12	U	ug/Kg	P378998	RPD
2156057	SM 2540 G (20th)	% Solid**	88.7		%	P379013	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 08:59

Field ID: SB-8 (2-4)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156053	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorodecanoic acid (PFDA)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorododecanoic acid (PFDoA)**	0.11	U	ug/Kg	P378998	RPD
		Perfluoroheptanoic acid (PFHpA)**	0.39	I	ug/Kg	P378998	RPD
		Perfluorohexanesulfonic acid (PFHxS)**	0.15	I	ug/Kg	P378998	RPD
		Perfluorohexanoic acid (PFHxA)**	0.65	I	ug/Kg	P378998	RPD
		Perfluorononanoic acid (PFNA)**	0.45	I	ug/Kg	P378998	RPD
		Perfluorooctanesulfonic acid (PFOS)**	5.7		ug/Kg	P378998	RPD
		Perfluorooctanoic acid (PFOA)**	0.38	I	ug/Kg	P378998	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378998	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378998	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378998	RPD
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378998	RPD
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378998	RPD
		Perfluoropentanoic acid (PFPeA)**	0.97	I	ug/Kg	P378998	MS, RPD
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.23	U	ug/Kg	P378998	RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378998	RPD
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.46	U	ug/Kg	P378998	RPD
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.23	U	ug/Kg	P378998	RPD
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378998	RPD
2156058	SM 2540 G (20th)	% Solid**	90.4		%	P379013	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: PBSC

Collection Date/Time: 02/05/2020 09:01

Field ID: SB-8 (4-5)

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156054	EPA 8321B	Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorodecanoic acid (PFDA)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorododecanoic acid (PFDoA)**	0.11	U	ug/Kg	P378998	RPD
		Perfluoroheptanoic acid (PFHpA)**	0.25	I	ug/Kg	P378998	RPD
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorohexanoic acid (PFHxA)**	0.23	U	ug/Kg	P378998	RPD
		Perfluorononanoic acid (PFNA)**	0.77		ug/Kg	P378998	RPD
		Perfluorooctanesulfonic acid (PFOS)**	12		ug/Kg	P378998	RPD
		Perfluorooctanoic acid (PFOA)**	0.43	I	ug/Kg	P378998	RPD
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378998	
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378998	
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378998	RPD
		N-Me perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378998	RPD
		N-Et perfluorooctanesulfonamidoAcid**	0.11	U	ug/Kg	P378998	RPD
		Perfluoropentanoic acid (PFPeA)**	0.45	U	ug/Kg	P378998	MS, RPD
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.23	U	ug/Kg	P378998	RPD
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378998	RPD
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.45	U	ug/Kg	P378998	RPD
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.23	U	ug/Kg	P378998	RPD
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378998	RPD
		Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378998	RPD
2156059	SM 2540 G (20th)	% Solid**	90.4		%	P379013	

Ref. Method and Comment:

EPA 8321B: MS accuracy for PFOS could not be assessed due to a high concentration of parameter in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P378518

Component	Result	Code	Units
4:2 Fluorotelomer sulfonate (4:2 FTS)	0.20	U	ug/Kg
6:2 Fluorotelomer sulfonate (6:2 FTS)	0.40	U	ug/Kg
8:2 Fluorotelomer sulfonate (8:2 FTS)	0.20	U	ug/Kg
N-Et perfluorooctanesulfonamidoAc acid	0.10	U	ug/Kg
N-Me perfluorooctanesulfonamidoAc acid	0.10	U	ug/Kg
Perfluorobutanesulfonic acid (PFBS)	0.10	U	ug/Kg
Perfluorodecanesulfonic acid (PFDS)	0.10	U	ug/Kg
Perfluorodecanoic acid (PFDA)	0.10	U	ug/Kg
Perfluorododecanoic acid (PFDoA)	0.10	U	ug/Kg
Perfluoroheptanesulfonic acid (PFHpS)	0.10	U	ug/Kg
Perfluoroheptanoic acid (PFHpA)	0.10	U	ug/Kg
Perfluorohexanesulfonic acid (PFHxS)	0.10	U	ug/Kg
Perfluorohexanoic acid (PFHxA)	0.10	U	ug/Kg
Perfluorononanesulfonic acid (PFNS)	0.10	U	ug/Kg
Perfluorononanoic acid (PFNA)	0.10	U	ug/Kg
Perfluorooctanesulfonic acid (PFOS)	0.20	U	ug/Kg
Perfluorooctanoic acid (PFOA)	0.10	U	ug/Kg
Perfluoropentanesulfonic acid (PFPeS)	0.10	U	ug/Kg
Perfluoropentanoic acid (PFPeA)	0.40	U	ug/Kg
Perfluorotetradecanoic acid (PFTeA)	0.10	U	ug/Kg
Perfluorotridecanoic acid (PFTriA)	0.10	U	ug/Kg
Perfluoroundecanoic acid (PFUnA)	0.10	U	ug/Kg

Reference Method: EPA 8321B
Batch ID: P378519

Component	Result	Code	Units
4:2 Fluorotelomer sulfonate (4:2 FTS)	0.20	U	ug/Kg
6:2 Fluorotelomer sulfonate (6:2 FTS)	0.40	U	ug/Kg
8:2 Fluorotelomer sulfonate (8:2 FTS)	0.20	U	ug/Kg
N-Et perfluorooctanesulfonamidoAc acid	0.10	U	ug/Kg
N-Me perfluorooctanesulfonamidoAc acid	0.10	U	ug/Kg
Perfluorobutanesulfonic acid (PFBS)	0.10	U	ug/Kg
Perfluorodecanesulfonic acid (PFDS)	0.10	U	ug/Kg
Perfluorodecanoic acid (PFDA)	0.10	U	ug/Kg
Perfluorododecanoic acid (PFDoA)	0.10	U	ug/Kg
Perfluoroheptanesulfonic acid (PFHpS)	0.10	U	ug/Kg
Perfluoroheptanoic acid (PFHpA)	0.10	U	ug/Kg
Perfluorohexanesulfonic acid (PFHxS)	0.10	U	ug/Kg
Perfluorohexanoic acid (PFHxA)	0.10	U	ug/Kg
Perfluorononanesulfonic acid (PFNS)	0.10	U	ug/Kg
Perfluorononanoic acid (PFNA)	0.10	U	ug/Kg
Perfluorooctanesulfonic acid (PFOS)	0.20	U	ug/Kg
Perfluorooctanoic acid (PFOA)	0.10	U	ug/Kg
Perfluoropentanesulfonic acid (PFPeS)	0.10	U	ug/Kg
Perfluoropentanoic acid (PFPeA)	0.40	U	ug/Kg
Perfluorotetradecanoic acid (PFTeA)	0.10	U	ug/Kg
Perfluorotridecanoic acid (PFTriA)	0.10	U	ug/Kg
Perfluoroundecanoic acid (PFUnA)	0.10	U	ug/Kg

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P378520

Component	Result	Code	Units
4:2 Fluorotelomer sulfonate (4:2 FTS)	0.20	U	ug/Kg
6:2 Fluorotelomer sulfonate (6:2 FTS)	0.40	U	ug/Kg
8:2 Fluorotelomer sulfonate (8:2 FTS)	0.20	U	ug/Kg
N-Et perfluorooctanesulfonamidoAc acid	0.10	U	ug/Kg
N-Me perfluorooctanesulfonamidoAc acid	0.10	U	ug/Kg
Perfluorobutanesulfonic acid (PFBS)	0.10	U	ug/Kg
Perfluorodecanesulfonic acid (PFDS)	0.10	U	ug/Kg
Perfluorodecanoic acid (PFDA)	0.10	U	ug/Kg
Perfluorododecanoic acid (PFDoA)	0.10	U	ug/Kg
Perfluoroheptanesulfonic acid (PFHpS)	0.10	U	ug/Kg
Perfluoroheptanoic acid (PFHpA)	0.10	U	ug/Kg
Perfluorohexanesulfonic acid (PFHxS)	0.10	U	ug/Kg
Perfluorohexanoic acid (PFHxA)	0.10	U	ug/Kg
Perfluorononanesulfonic acid (PFNS)	0.10	U	ug/Kg
Perfluorononanoic acid (PFNA)	0.10	U	ug/Kg
Perfluorooctanesulfonic acid (PFOS)	0.20	U	ug/Kg
Perfluorooctanoic acid (PFOA)	0.10	U	ug/Kg
Perfluoropentanesulfonic acid (PFPeS)	0.10	U	ug/Kg
Perfluoropentanoic acid (PFPeA)	0.40	U	ug/Kg
Perfluorotetradecanoic acid (PFTeA)	0.10	U	ug/Kg
Perfluorotridecanoic acid (PFTriA)	0.10	U	ug/Kg
Perfluoroundecanoic acid (PFUnA)	0.10	U	ug/Kg

Reference Method: EPA 8321B
Batch ID: P378524

Component	Result	Code	Units
4:2 Fluorotelomer sulfonate (4:2 FTS)	0.19	U	ug/Kg
6:2 Fluorotelomer sulfonate (6:2 FTS)	0.39	U	ug/Kg
8:2 Fluorotelomer sulfonate (8:2 FTS)	0.19	U	ug/Kg
N-Et perfluorooctanesulfonamidoAc acid	0.097	U	ug/Kg
N-Me perfluorooctanesulfonamidoAc acid	0.097	U	ug/Kg
Perfluorobutanesulfonic acid (PFBS)	0.097	U	ug/Kg
Perfluorodecanesulfonic acid (PFDS)	0.097	U	ug/Kg
Perfluorodecanoic acid (PFDA)	0.097	U	ug/Kg
Perfluorododecanoic acid (PFDoA)	0.097	U	ug/Kg
Perfluoroheptanesulfonic acid (PFHpS)	0.097	U	ug/Kg
Perfluoroheptanoic acid (PFHpA)	0.19	U	ug/Kg
Perfluorohexanesulfonic acid (PFHxS)	0.097	U	ug/Kg
Perfluorohexanoic acid (PFHxA)	0.19	U	ug/Kg
Perfluorononanesulfonic acid (PFNS)	0.097	U	ug/Kg
Perfluorononanoic acid (PFNA)	0.097	U	ug/Kg
Perfluorooctanesulfonic acid (PFOS)	0.19	U	ug/Kg
Perfluorooctanoic acid (PFOA)	0.097	U	ug/Kg
Perfluoropentanesulfonic acid (PFPeS)	0.097	U	ug/Kg
Perfluoropentanoic acid (PFPeA)	0.39	U	ug/Kg
Perfluorotetradecanoic acid (PFTeA)	0.097	U	ug/Kg
Perfluorotridecanoic acid (PFTriA)	0.097	U	ug/Kg
Perfluoroundecanoic acid (PFUnA)	0.097	U	ug/Kg

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P378769

Component	Result	Code	Units
4:2 Fluorotelomer sulfonate (4:2 FTS)	2.0	U	ng/L
6:2 Fluorotelomer sulfonate (6:2 FTS)	4.0	U	ng/L
8:2 Fluorotelomer sulfonate (8:2 FTS)	2.0	U	ng/L
N-Et perfluorooctanesulfonamidoAc acid	0.40	U	ng/L
N-Me perfluorooctanesulfonamidoAc acid	0.40	U	ng/L
Perfluorobutanesulfonic acid (PFBS)	0.40	U	ng/L
Perfluorodecanesulfonic acid (PFDS)	0.40	U	ng/L
Perfluorodecanoic acid (PFDA)	1.0	U	ng/L
Perfluorododecanoic acid (PFDoA)	1.0	U	ng/L
Perfluoroheptanesulfonic acid (PFHpS)	0.40	U	ng/L
Perfluoroheptanoic acid (PFHpA)	2.0	U	ng/L
Perfluorohexanesulfonic acid (PFHxS)	0.40	U	ng/L
Perfluorohexanoic acid (PFHxA)	2.0	U	ng/L
Perfluorononanesulfonic acid (PFNS)	0.40	U	ng/L
Perfluorononanoic acid (PFNA)	1.0	U	ng/L
Perfluorooctanesulfonic acid (PFOS)	2.0	U	ng/L
Perfluorooctanoic acid (PFOA)	1.0	U	ng/L
Perfluoropentanesulfonic acid (PFPeS)	0.40	U	ng/L
Perfluoropentanoic acid (PFPeA)	4.0	U	ng/L
Perfluorotetradecanoic acid (PFTeA)	0.40	U	ng/L
Perfluorotridecanoic acid (PFTriA)	0.40	U	ng/L
Perfluoroundecanoic acid (PFUnA)	1.0	U	ng/L

Reference Method: EPA 8321B
Batch ID: P378998

Component	Result	Code	Units
4:2 Fluorotelomer sulfonate (4:2 FTS)	0.19	U	ug/Kg
6:2 Fluorotelomer sulfonate (6:2 FTS)	0.39	U	ug/Kg
8:2 Fluorotelomer sulfonate (8:2 FTS)	0.19	U	ug/Kg
N-Et perfluorooctanesulfonamidoAc acid	0.097	U	ug/Kg
N-Me perfluorooctanesulfonamidoAc acid	0.097	U	ug/Kg
Perfluorobutanesulfonic acid (PFBS)	0.097	U	ug/Kg
Perfluorodecanesulfonic acid (PFDS)	0.097	U	ug/Kg
Perfluorodecanoic acid (PFDA)	0.097	U	ug/Kg
Perfluorododecanoic acid (PFDoA)	0.097	U	ug/Kg
Perfluoroheptanesulfonic acid (PFHpS)	0.097	U	ug/Kg
Perfluoroheptanoic acid (PFHpA)	0.19	U	ug/Kg
Perfluorohexanesulfonic acid (PFHxS)	0.097	U	ug/Kg
Perfluorohexanoic acid (PFHxA)	0.19	U	ug/Kg
Perfluorononanesulfonic acid (PFNS)	0.097	U	ug/Kg
Perfluorononanoic acid (PFNA)	0.097	U	ug/Kg
Perfluorooctanesulfonic acid (PFOS)	0.19	U	ug/Kg
Perfluorooctanoic acid (PFOA)	0.097	U	ug/Kg
Perfluoropentanesulfonic acid (PFPeS)	0.097	U	ug/Kg
Perfluoropentanoic acid (PFPeA)	0.39	U	ug/Kg
Perfluorotetradecanoic acid (PFTeA)	0.097	U	ug/Kg
Perfluorotridecanoic acid (PFTriA)	0.097	U	ug/Kg
Perfluoroundecanoic acid (PFUnA)	0.097	U	ug/Kg

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P378518

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	89.5		P	40 - 150
6:2 Fluorotelomer sulfonate (6:2 FTS)	66.8		P	40 - 150
8:2 Fluorotelomer sulfonate (8:2 FTS)	99.7		P	40 - 150
N-Et perfluorooctanesulfonamidoAc acid	89.1		P	40 - 150
N-Me perfluorooctanesulfonamidoAc acid	83.5		P	40 - 150
Perfluorobutanesulfonic acid (PFBS)	93.0		P	40 - 150
Perfluorodecanesulfonic acid (PFDS)	93.8		P	40 - 150
Perfluorodecanoic acid (PFDA)	81.6		P	40 - 150
Perfluorododecanoic acid (PFDoA)	79.9		P	40 - 150
Perfluoroheptanesulfonic acid (PFHpS)	97.2		P	40 - 150
Perfluoroheptanoic acid (PFHpA)	60.4		P	40 - 150
Perfluorohexanesulfonic acid (PFHxS)	82.8		P	40 - 150
Perfluorohexanoic acid (PFHxA)	94.1		P	40 - 150
Perfluorononanesulfonic acid (PFNS)	78.0		P	40 - 150
Perfluorononanoic acid (PFNA)	94.5		P	40 - 150
Perfluorooctanesulfonic acid (PFOS)	84.0		P	40 - 150
Perfluorooctanoic acid (PFOA)	87.1		P	40 - 150
Perfluoropentanesulfonic acid (PFPeS)	92.2		P	40 - 150
Perfluoropentanoic acid (PFPeA)	101		P	40 - 150
Perfluorotetradecanoic acid (PFTeA)	95.8		P	40 - 150
Perfluorotridecanoic acid (PFTriA)	95.0		P	40 - 150
Perfluoroundecanoic acid (PFUnA)	79.9		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P378519

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	119		P	40 - 150
6:2 Fluorotelomer sulfonate (6:2 FTS)	129		P	40 - 150
8:2 Fluorotelomer sulfonate (8:2 FTS)	126		P	40 - 150
N-Et perfluorooctanesulfonamidoAc acid	113		P	40 - 150
N-Me perfluorooctanesulfonamidoAc acid	100		P	40 - 150
Perfluorobutanesulfonic acid (PFBS)	111		P	40 - 150
Perfluorodecanesulfonic acid (PFDS)	116		P	40 - 150
Perfluorodecanoic acid (PFDA)	108		P	40 - 150
Perfluorododecanoic acid (PFDoA)	99.4		P	40 - 150
Perfluoroheptanesulfonic acid (PFHpS)	112		P	40 - 150
Perfluoroheptanoic acid (PFHpA)	111		P	40 - 150
Perfluorohexanesulfonic acid (PFHxS)	142		P	40 - 150
Perfluorohexanoic acid (PFHxA)	111		P	40 - 150
Perfluorononanesulfonic acid (PFNS)	134		P	40 - 150
Perfluorononanoic acid (PFNA)	139		P	40 - 150
Perfluorooctanesulfonic acid (PFOS)	127		P	40 - 150
Perfluorooctanoic acid (PFOA)	111		P	40 - 150
Perfluoropentanesulfonic acid (PFPeS)	109		P	40 - 150
Perfluoropentanoic acid (PFPeA)	125		P	40 - 150
Perfluorotetradecanoic acid (PFTeA)	134		P	40 - 150
Perfluorotridecanoic acid (PFTriA)	105		P	40 - 150
Perfluoroundecanoic acid (PFUnA)	108		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P378520

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	102		P	40 - 150
6:2 Fluorotelomer sulfonate (6:2 FTS)	90.6		P	40 - 150
8:2 Fluorotelomer sulfonate (8:2 FTS)	74.8		P	40 - 150
N-Et perfluorooctanesulfonamidoAc acid	110		P	40 - 150
N-Me perfluorooctanesulfonamidoAc acid	98.9		P	40 - 150
Perfluorobutanesulfonic acid (PFBS)	103		P	40 - 150
Perfluorodecanesulfonic acid (PFDS)	96.2		P	40 - 150
Perfluorodecanoic acid (PFDA)	109		P	40 - 150
Perfluorododecanoic acid (PFDoA)	131		P	40 - 150
Perfluoroheptanesulfonic acid (PFHpS)	87.7		P	40 - 150
Perfluoroheptanoic acid (PFHpA)	131		P	40 - 150
Perfluorohexanesulfonic acid (PFHxS)	145		P	40 - 150
Perfluorohexanoic acid (PFHxA)	128		P	40 - 150
Perfluorononanesulfonic acid (PFNS)	149		P	40 - 150
Perfluorononanoic acid (PFNA)	110		P	40 - 150
Perfluorooctanesulfonic acid (PFOS)	133		P	40 - 150
Perfluorooctanoic acid (PFOA)	90.6		P	40 - 150
Perfluoropentanesulfonic acid (PFPeS)	98.2		P	40 - 150
Perfluoropentanoic acid (PFPeA)	139		P	40 - 150
Perfluorotetradecanoic acid (PFTeA)	102		P	40 - 150
Perfluorotridecanoic acid (PFTriA)	113		P	40 - 150
Perfluoroundecanoic acid (PFUnA)	145		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P378524

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	111		P	40 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	87.6		P	40 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	123		P	40 - 160
N-Et perfluorooctanesulfonamidoAc acid	104		P	40 - 160
N-Me perfluorooctanesulfonamidoAc acid	102		P	40 - 160
Perfluorobutanesulfonic acid (PFBS)	154		P	40 - 160
Perfluorodecanesulfonic acid (PFDS)	129		P	40 - 160
Perfluorodecanoic acid (PFDA)	115		P	40 - 160
Perfluorododecanoic acid (PFDoA)	122		P	40 - 160
Perfluoroheptanesulfonic acid (PFHpS)	116		P	40 - 160
Perfluoroheptanoic acid (PFHpA)	96.5		P	40 - 160
Perfluorohexanesulfonic acid (PFHxS)	137		P	40 - 160
Perfluorohexanoic acid (PFHxA)	142		P	40 - 160
Perfluorononanesulfonic acid (PFNS)	116		P	40 - 160
Perfluorononanoic acid (PFNA)	149		P	40 - 160
Perfluorooctanesulfonic acid (PFOS)	112		P	40 - 160
Perfluorooctanoic acid (PFOA)	94.7		P	40 - 160
Perfluoropentanesulfonic acid (PFPeS)	128		P	40 - 160
Perfluoropentanoic acid (PFPeA)	135		P	40 - 160
Perfluorotetradecanoic acid (PFTeA)	134		P	40 - 160
Perfluorotridecanoic acid (PFTriA)	106		P	40 - 160
Perfluoroundecanoic acid (PFUnA)	157		P	40 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P378769

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	149		P	30 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	153		P	30 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	96.7		P	30 - 160
N-Et perfluorooctanesulfonamidoAc acid	93.0		P	30 - 160
N-Me perfluorooctanesulfonamidoAc acid	102		P	30 - 160
Perfluorobutanesulfonic acid (PFBS)	139		P	30 - 160
Perfluorodecanesulfonic acid (PFDS)	112		P	30 - 160
Perfluorodecanoic acid (PFDA)	92.6		P	30 - 160
Perfluorododecanoic acid (PFDoA)	90.2		P	30 - 160
Perfluoroheptanesulfonic acid (PFHpS)	105		P	30 - 160
Perfluoroheptanoic acid (PFHpA)	89.9		P	30 - 160
Perfluorohexanesulfonic acid (PFHxS)	128		P	30 - 160
Perfluorohexanoic acid (PFHxA)	121		P	30 - 160
Perfluorononanesulfonic acid (PFNS)	106		P	30 - 160
Perfluorononanoic acid (PFNA)	123		P	30 - 160
Perfluorooctanesulfonic acid (PFOS)	117		P	30 - 160
Perfluorooctanoic acid (PFOA)	134		P	30 - 160
Perfluoropentanesulfonic acid (PFPeS)	109		P	30 - 160
Perfluoropentanoic acid (PFPeA)	100		P	30 - 160
Perfluorotetradecanoic acid (PFTeA)	63.6		P	30 - 160
Perfluorotridecanoic acid (PFTriA)	59.1		P	30 - 160
Perfluoroundecanoic acid (PFUnA)	153		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P378998

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	75.9		P	40 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	68.6		P	40 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	75.8		P	40 - 160
N-Et perfluorooctanesulfonamidoAc acid	71.0		P	40 - 160
N-Me perfluorooctanesulfonamidoAc acid	70.5		P	40 - 160
Perfluorobutanesulfonic acid (PFBS)	101		P	40 - 160
Perfluorodecanesulfonic acid (PFDS)	83.4		P	40 - 160
Perfluorodecanoic acid (PFDA)	84.2		P	40 - 160
Perfluorododecanoic acid (PFDoA)	94.9		P	40 - 160
Perfluoroheptanesulfonic acid (PFHpS)	74.6		P	40 - 160
Perfluoroheptanoic acid (PFHpA)	78.2		P	40 - 160
Perfluorohexanesulfonic acid (PFHxS)	102		P	40 - 160
Perfluorohexanoic acid (PFHxA)	79.4		P	40 - 160
Perfluorononanesulfonic acid (PFNS)	89.7		P	40 - 160
Perfluorononanoic acid (PFNA)	65.3		P	40 - 160
Perfluorooctanesulfonic acid (PFOS)	84.3		P	40 - 160
Perfluorooctanoic acid (PFOA)	61.1		P	40 - 160
Perfluoropentanesulfonic acid (PFPeS)	85.7		P	40 - 160
Perfluoropentanoic acid (PFPeA)	93.2		P	40 - 160
Perfluorotetradecanoic acid (PFTeA)	84.3		P	40 - 160
Perfluorotridecanoic acid (PFTriA)	78.4		P	40 - 160
Perfluoroundecanoic acid (PFUnA)	120		P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P378518

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155846	4:2 Fluorotelomer sulfonate (4:2 FTS)	118	106	P/P	40 - 150
2155846	6:2 Fluorotelomer sulfonate (6:2 FTS)	88.3	78.8	P/P	40 - 150
2155846	8:2 Fluorotelomer sulfonate (8:2 FTS)	126	136	P/P	40 - 150
2155846	N-Et perfluorooctanesulfonamidoAc acid	109	118	P/P	40 - 150
2155846	N-Me perfluorooctanesulfonamidoAc acid	106	106	P/P	40 - 150
2155846	Perfluorobutanesulfonic acid (PFBS)	117	117	P/P	40 - 150
2155846	Perfluorodecanesulfonic acid (PFDS)	114	130	P/P	40 - 150
2155846	Perfluorodecanoic acid (PFDA)	124	162	P/F	40 - 150
2155846	Perfluorododecanoic acid (PFDoA)	76.7	89.0	P/P	40 - 150
2155846	Perfluoroheptanesulfonic acid (PFHpS)	116	139	P/P	40 - 150
2155846	Perfluoroheptanoic acid (PFHpA)	92.8	87.2	P/P	40 - 150
2155846	Perfluorohexanesulfonic acid (PFHxS)	97.5	109	P/P	40 - 150
2155846	Perfluorohexanoic acid (PFHxA)	130	145	P/P	40 - 150
2155846	Perfluorononanesulfonic acid (PFNS)	96.2	96.3	P/P	40 - 150
2155846	Perfluorononanoic acid (PFNA)	115	174	P/F	40 - 150
2155846	Perfluorooctanesulfonic acid (PFOS)	114	146	P/P	40 - 150
2155846	Perfluorooctanoic acid (PFOA)	120	115	P/P	40 - 150
2155846	Perfluoropentanesulfonic acid (PFPeS)	117	124	P/P	40 - 150
2155846	Perfluoropentanoic acid (PFPeA)	103	122	P/P	40 - 150
2155846	Perfluorotetradecanoic acid (PFTeA)	135	130	P/P	40 - 150
2155846	Perfluorotridecanoic acid (PFTriA)	107	109	P/P	40 - 150
2155846	Perfluoroundecanoic acid (PFUnA)	89.6	130	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P378519

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155860	4:2 Fluorotelomer sulfonate (4:2 FTS)	137	134	P/P	40 - 150
2155860	6:2 Fluorotelomer sulfonate (6:2 FTS)	141	159	P/F	40 - 150
2155860	8:2 Fluorotelomer sulfonate (8:2 FTS)	163	162	F/F	40 - 150
2155860	N-Et perfluorooctanesulfonamidoAc acid	106	118	P/P	40 - 150
2155860	N-Me perfluorooctanesulfonamidoAc acid	106	108	P/P	40 - 150
2155860	Perfluorobutanesulfonic acid (PFBS)	124	125	P/P	40 - 150
2155860	Perfluorodecanesulfonic acid (PFDS)	124	131	P/P	40 - 150
2155860	Perfluorodecanoic acid (PFDA)	134	135	P/P	40 - 150
2155860	Perfluorododecanoic acid (PFDoA)	94.5	122	P/P	40 - 150
2155860	Perfluoroheptanesulfonic acid (PFHpS)	122	125	P/P	40 - 150
2155860	Perfluoroheptanoic acid (PFHpA)	104	113	P/P	40 - 150
2155860	Perfluorohexanesulfonic acid (PFHxS)	130	166	P/F	40 - 150
2155860	Perfluorohexanoic acid (PFHxA)	108	125	P/P	40 - 150
2155860	Perfluorononanesulfonic acid (PFNS)	127	154	P/F	40 - 150
2155860	Perfluorononanoic acid (PFNA)	115	116	P/P	40 - 150
2155860	Perfluorooctanoic acid (PFOA)	132	130	P/P	40 - 150
2155860	Perfluoropentanesulfonic acid (PFPeS)	124	120	P/P	40 - 150
2155860	Perfluoropentanoic acid (PFPeA)	94.6	145	P/P	40 - 150
2155860	Perfluorotetradecanoic acid (PFTeA)	99.8	99.7	P/P	40 - 150
2155860	Perfluorotridecanoic acid (PFTriA)	124	110	P/P	40 - 150
2155860	Perfluoroundecanoic acid (PFUnA)	117	119	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P378520

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155918	4:2 Fluorotelomer sulfonate (4:2 FTS)	118	172	P/F	40 - 150
2155918	8:2 Fluorotelomer sulfonate (8:2 FTS)	88.0	154	P/F	40 - 150
2155918	N-Et perfluorooctanesulfonamidoAc acid	95.0	114	P/P	40 - 150
2155918	N-Me perfluorooctanesulfonamidoAc acid	84.1	104	P/P	40 - 150
2155918	Perfluorobutanesulfonic acid (PFBS)	110	146	P/P	40 - 150
2155918	Perfluorodecanesulfonic acid (PFDS)	104	129	P/P	40 - 150
2155918	Perfluorodecanoic acid (PFDA)	110	128	P/P	40 - 150
2155918	Perfluorododecanoic acid (PFDoA)	135	110	P/P	40 - 150
2155918	Perfluoroheptanesulfonic acid (PFHpS)	96.8	128	P/P	40 - 150
2155918	Perfluoroheptanoic acid (PFHpA)	86.4	103	P/P	40 - 150
2155918	Perfluorohexanesulfonic acid (PFHxS)	149	140	P/P	40 - 150
2155918	Perfluorononanesulfonic acid (PFNS)	145	141	P/P	40 - 150
2155918	Perfluorononanoic acid (PFNA)	141	143	P/P	40 - 150
2155918	Perfluoropentanesulfonic acid (PFPeS)	106	140	P/P	40 - 150
2155918	Perfluorotetradecanoic acid (PFTeA)	95.9	125	P/P	40 - 150
2155918	Perfluorotridecanoic acid (PFTriA)	112	126	P/P	40 - 150
2155918	Perfluoroundecanoic acid (PFUnA)	142	140	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P378524

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155985	4:2 Fluorotelomer sulfonate (4:2 FTS)	143	138	P/P	40 - 160
2155985	6:2 Fluorotelomer sulfonate (6:2 FTS)	122	103	P/P	40 - 160
2155985	8:2 Fluorotelomer sulfonate (8:2 FTS)	167	148	F/P	40 - 160
2155985	N-Et perfluorooctanesulfonamidoAc acid	90.5	92.2	P/P	40 - 160
2155985	N-Me perfluorooctanesulfonamidoAc acid	120	111	P/P	40 - 160
2155985	Perfluorobutanesulfonic acid (PFBS)	130	126	P/P	40 - 160
2155985	Perfluorodecanesulfonic acid (PFDS)	103	104	P/P	40 - 160
2155985	Perfluorodecanoic acid (PFDA)	151	124	P/P	40 - 160
2155985	Perfluorododecanoic acid (PFDoA)	126	113	P/P	40 - 160
2155985	Perfluoroheptanesulfonic acid (PFHpS)	94.1	91.4	P/P	40 - 160
2155985	Perfluoroheptanoic acid (PFHpA)	104	86.5	P/P	40 - 160
2155985	Perfluorohexanesulfonic acid (PFHxS)	101	98.4	P/P	40 - 160
2155985	Perfluorohexanoic acid (PFHxA)	101	104	P/P	40 - 160
2155985	Perfluorononanesulfonic acid (PFNS)	107	90.1	P/P	40 - 160
2155985	Perfluorononanoic acid (PFNA)	114	116	P/P	40 - 160
2155985	Perfluorooctanoic acid (PFOA)	109	85.6	P/P	40 - 160
2155985	Perfluoropentanesulfonic acid (PFPeS)	104	89.6	P/P	40 - 160
2155985	Perfluoropentanoic acid (PFPeA)	89.6	81.8	P/P	40 - 160
2155985	Perfluorotetradecanoic acid (PFTeA)	116	117	P/P	40 - 160
2155985	Perfluorotridecanoic acid (PFTriA)	99.7	99.9	P/P	40 - 160
2155985	Perfluoroundecanoic acid (PFUnA)	128	115	P/P	40 - 160

Reference Method: EPA 8321B
 Batch ID: P378769

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156522	4:2 Fluorotelomer sulfonate (4:2 FTS)	143	166	P/F	30 - 160
2156522	6:2 Fluorotelomer sulfonate (6:2 FTS)	141	246	P/F	30 - 160
2156522	8:2 Fluorotelomer sulfonate (8:2 FTS)	105	149	P/P	30 - 160
2156522	N-Et perfluorooctanesulfonamidoAc acid	76.8	99.3	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P378769

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156522	N-Me perfluorooctanesulfonamidoAc acid	87.8	127	P/P	30 - 160
2156522	Perfluorobutanesulfonic acid (PFBS)	148	197	P/F	30 - 160
2156522	Perfluorodecanesulfonic acid (PFDS)	82.9	107	P/P	30 - 160
2156522	Perfluorodecanoic acid (PFDA)	75.2	124	P/P	30 - 160
2156522	Perfluorododecanoic acid (PFDoA)	85.7	104	P/P	30 - 160
2156522	Perfluoroheptanesulfonic acid (PFHpS)	101	128	P/P	30 - 160
2156522	Perfluoroheptanoic acid (PFHpA)	112	182	P/F	30 - 160
2156522	Perfluorohexanesulfonic acid (PFHxS)	149	234	P/F	30 - 160
2156522	Perfluorohexanoic acid (PFHxA)	134	205	P/F	30 - 160
2156522	Perfluorononanesulfonic acid (PFNS)	90.9	123	P/P	30 - 160
2156522	Perfluorononanoic acid (PFNA)	99.4	122	P/P	30 - 160
2156522	Perfluorooctanesulfonic acid (PFOS)	121	226	P/F	30 - 160
2156522	Perfluorooctanoic acid (PFOA)	127	200	P/F	30 - 160
2156522	Perfluoropentanesulfonic acid (PFPeS)	105	129	P/P	30 - 160
2156522	Perfluoropentanoic acid (PFPeA)	115	147	P/P	30 - 160
2156522	Perfluorotetradecanoic acid (PFTeA)	51.4	120	P/P	30 - 160
2156522	Perfluorotridecanoic acid (PFTriA)	62.4	108	P/P	30 - 160
2156522	Perfluoroundecanoic acid (PFUnA)	121	140	P/P	30 - 160

Reference Method: EPA 8321B

Batch ID: P378998

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156027	4:2 Fluorotelomer sulfonate (4:2 FTS)	65.3	99.1	P/P	40 - 160
2156027	6:2 Fluorotelomer sulfonate (6:2 FTS)	54.0	91.0	P/P	40 - 160
2156027	8:2 Fluorotelomer sulfonate (8:2 FTS)	61.3	96.6	P/P	40 - 160
2156027	N-Et perfluorooctanesulfonamidoAc acid	55.5	87.8	P/P	40 - 160
2156027	N-Me perfluorooctanesulfonamidoAc acid	60.9	97.7	P/P	40 - 160
2156027	Perfluorobutanesulfonic acid (PFBS)	79.5	128	P/P	40 - 160
2156027	Perfluorodecanesulfonic acid (PFDS)	65.7	99.6	P/P	40 - 160
2156027	Perfluorodecanoic acid (PFDA)	60.3	105	P/P	40 - 160
2156027	Perfluorododecanoic acid (PFDoA)	74.0	117	P/P	40 - 160
2156027	Perfluoroheptanesulfonic acid (PFHpS)	62.6	90.3	P/P	40 - 160
2156027	Perfluoroheptanoic acid (PFHpA)	56.2	94.7	P/P	40 - 160
2156027	Perfluorohexanesulfonic acid (PFHxS)	66.8	116	P/P	40 - 160
2156027	Perfluorohexanoic acid (PFHxA)	77.4	132	P/P	40 - 160
2156027	Perfluorononanesulfonic acid (PFNS)	70.2	118	P/P	40 - 160
2156027	Perfluorononanoic acid (PFNA)	48.9	81.4	P/P	40 - 160
2156027	Perfluorooctanoic acid (PFOA)	43.4	81.7	P/P	40 - 160
2156027	Perfluoropentanesulfonic acid (PFPeS)	74.1	106	P/P	40 - 160
2156027	Perfluoropentanoic acid (PFPeA)	39.2	83.6	F/P	40 - 160
2156027	Perfluorotetradecanoic acid (PFTeA)	77.3	90.2	P/P	40 - 160
2156027	Perfluorotridecanoic acid (PFTriA)	61.6	72.1	P/P	40 - 160
2156027	Perfluoroundecanoic acid (PFUnA)	80.3	126	P/P	40 - 160

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P378518

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155846	4:2 Fluorotelomer sulfonate (4:2 FTS)	11.1	Spike	P	0 - 35
2155846	6:2 Fluorotelomer sulfonate (6:2 FTS)	11.4	Spike	P	0 - 35
2155846	8:2 Fluorotelomer sulfonate (8:2 FTS)	8.13	Spike	P	0 - 35
2155846	N-Et perfluorooctanesulfonamidoAc acid	7.67	Spike	P	0 - 35
2155846	N-Me perfluorooctanesulfonamidoAc acid	0.456	Spike	P	0 - 35
2155846	Perfluorobutanesulfonic acid (PFBS)	0.0752	Spike	P	0 - 35
2155846	Perfluorodecanesulfonic acid (PFDS)	13.0	Spike	P	0 - 35
2155846	Perfluorodecanoic acid (PFDA)	26.9	Spike	P	0 - 35
2155846	Perfluorododecanoic acid (PFDoA)	14.8	Spike	P	0 - 35
2155846	Perfluoroheptanesulfonic acid (PFHpS)	18.3	Spike	P	0 - 35
2155846	Perfluoroheptanoic acid (PFHpA)	5.54	Spike	P	0 - 35
2155846	Perfluorohexanesulfonic acid (PFHxS)	7.66	Spike	P	0 - 35
2155846	Perfluorohexanoic acid (PFHxA)	10.3	Spike	P	0 - 35
2155846	Perfluorononanesulfonic acid (PFNS)	0.126	Spike	P	0 - 35
2155846	Perfluorononanoic acid (PFNA)	37.5	Spike	F	0 - 35
2155846	Perfluorooctanesulfonic acid (PFOS)	3.67	Spike	P	0 - 35
2155846	Perfluorooctanoic acid (PFOA)	4.52	Spike	P	0 - 35
2155846	Perfluoropentanesulfonic acid (PFPeS)	5.47	Spike	P	0 - 35
2155846	Perfluoropentanoic acid (PFPeA)	13.8	Spike	P	0 - 35
2155846	Perfluorotetradecanoic acid (PFTeA)	3.79	Spike	P	0 - 35
2155846	Perfluorotridecanoic acid (PFTriA)	1.96	Spike	P	0 - 35
2155846	Perfluoroundecanoic acid (PFUnA)	36.7	Spike	F	0 - 35

Reference Method: EPA 8321B

Batch ID: P378519

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155860	4:2 Fluorotelomer sulfonate (4:2 FTS)	2.29	Spike	P	0 - 35
2155860	6:2 Fluorotelomer sulfonate (6:2 FTS)	12.1	Spike	P	0 - 35
2155860	8:2 Fluorotelomer sulfonate (8:2 FTS)	0.577	Spike	P	0 - 35
2155860	N-Et perfluorooctanesulfonamidoAc acid	10.8	Spike	P	0 - 35
2155860	N-Me perfluorooctanesulfonamidoAc acid	1.79	Spike	P	0 - 35
2155860	Perfluorobutanesulfonic acid (PFBS)	0.800	Spike	P	0 - 35
2155860	Perfluorodecanesulfonic acid (PFDS)	5.05	Spike	P	0 - 35
2155860	Perfluorodecanoic acid (PFDA)	1.02	Spike	P	0 - 35
2155860	Perfluorododecanoic acid (PFDoA)	25.5	Spike	P	0 - 35
2155860	Perfluoroheptanesulfonic acid (PFHpS)	2.07	Spike	P	0 - 35
2155860	Perfluoroheptanoic acid (PFHpA)	6.81	Spike	P	0 - 35
2155860	Perfluorohexanesulfonic acid (PFHxS)	24.1	Spike	P	0 - 35
2155860	Perfluorohexanoic acid (PFHxA)	12.2	Spike	P	0 - 35
2155860	Perfluorononanesulfonic acid (PFNS)	19.5	Spike	P	0 - 35
2155860	Perfluorononanoic acid (PFNA)	0.280	Spike	P	0 - 35
2155860	Perfluorooctanesulfonic acid (PFOS)	19.9	Spike	P	0 - 35
2155860	Perfluorooctanoic acid (PFOA)	0.617	Spike	P	0 - 35
2155860	Perfluoropentanesulfonic acid (PFPeS)	2.79	Spike	P	0 - 35
2155860	Perfluoropentanoic acid (PFPeA)	30.3	Spike	P	0 - 35
2155860	Perfluorotetradecanoic acid (PFTeA)	0.0702	Spike	P	0 - 35
2155860	Perfluorotridecanoic acid (PFTriA)	11.4	Spike	P	0 - 35
2155860	Perfluoroundecanoic acid (PFUnA)	1.00	Spike	P	0 - 35

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P378520

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155918	4:2 Fluorotelomer sulfonate (4:2 FTS)	37.3	Spike	F	0 - 35
2155918	6:2 Fluorotelomer sulfonate (6:2 FTS)	11.4	Spike	P	0 - 35
2155918	8:2 Fluorotelomer sulfonate (8:2 FTS)	34.2	Spike	P	0 - 35
2155918	N-Et perfluorooctanesulfonamidoAc acid	18.2	Spike	P	0 - 35
2155918	N-Me perfluorooctanesulfonamidoAc acid	20.9	Spike	P	0 - 35
2155918	Perfluorobutanesulfonic acid (PFBS)	28.0	Spike	P	0 - 35
2155918	Perfluorodecanesulfonic acid (PFDS)	20.8	Spike	P	0 - 35
2155918	Perfluorodecanoic acid (PFDA)	14.8	Spike	P	0 - 35
2155918	Perfluorododecanoic acid (PFDoA)	20.3	Spike	P	0 - 35
2155918	Perfluoroheptanesulfonic acid (PFHpS)	27.5	Spike	P	0 - 35
2155918	Perfluoroheptanoic acid (PFHpA)	6.88	Spike	P	0 - 35
2155918	Perfluorohexanesulfonic acid (PFHxS)	6.02	Spike	P	0 - 35
2155918	Perfluorohexanoic acid (PFHxA)	1.39	Spike	P	0 - 35
2155918	Perfluorononanesulfonic acid (PFNS)	3.13	Spike	P	0 - 35
2155918	Perfluorononanoic acid (PFNA)	1.09	Spike	P	0 - 35
2155918	Perfluorooctanesulfonic acid (PFOS)	18.5	Spike	P	0 - 35
2155918	Perfluorooctanoic acid (PFOA)	37.7	Spike	F	0 - 35
2155918	Perfluoropentanesulfonic acid (PFPeS)	27.7	Spike	P	0 - 35
2155918	Perfluoropentanoic acid (PFPeA)	10.9	Spike	P	0 - 35
2155918	Perfluorotetradecanoic acid (PFTeA)	26.4	Spike	P	0 - 35
2155918	Perfluorotridecanoic acid (PFTriA)	11.3	Spike	P	0 - 35
2155918	Perfluoroundecanoic acid (PFUnA)	1.49	Spike	P	0 - 35

Reference Method: EPA 8321B

Batch ID: P378524

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155985	4:2 Fluorotelomer sulfonate (4:2 FTS)	3.92	Spike	P	0 - 35
2155985	6:2 Fluorotelomer sulfonate (6:2 FTS)	17.1	Spike	P	0 - 35
2155985	8:2 Fluorotelomer sulfonate (8:2 FTS)	12.3	Spike	P	0 - 35
2155985	N-Et perfluorooctanesulfonamidoAc acid	1.84	Spike	P	0 - 35
2155985	N-Me perfluorooctanesulfonamidoAc acid	7.71	Spike	P	0 - 35
2155985	Perfluorobutanesulfonic acid (PFBS)	3.76	Spike	P	0 - 35
2155985	Perfluorodecanesulfonic acid (PFDS)	0.479	Spike	P	0 - 35
2155985	Perfluorodecanoic acid (PFDA)	18.3	Spike	P	0 - 35
2155985	Perfluorododecanoic acid (PFDoA)	10.6	Spike	P	0 - 35
2155985	Perfluoroheptanesulfonic acid (PFHpS)	2.88	Spike	P	0 - 35
2155985	Perfluoroheptanoic acid (PFHpA)	18.5	Spike	P	0 - 35
2155985	Perfluorohexanesulfonic acid (PFHxS)	2.47	Spike	P	0 - 35
2155985	Perfluorohexanoic acid (PFHxA)	3.31	Spike	P	0 - 35
2155985	Perfluorononanesulfonic acid (PFNS)	17.4	Spike	P	0 - 35
2155985	Perfluorononanoic acid (PFNA)	1.53	Spike	P	0 - 35
2155985	Perfluorooctanesulfonic acid (PFOS)	15.1	Spike	P	0 - 35
2155985	Perfluorooctanoic acid (PFOA)	23.6	Spike	P	0 - 35
2155985	Perfluoropentanesulfonic acid (PFPeS)	14.8	Spike	P	0 - 35
2155985	Perfluoropentanoic acid (PFPeA)	6.46	Spike	P	0 - 35
2155985	Perfluorotetradecanoic acid (PFTeA)	0.762	Spike	P	0 - 35
2155985	Perfluorotridecanoic acid (PFTriA)	0.180	Spike	P	0 - 35
2155985	Perfluoroundecanoic acid (PFUnA)	10.6	Spike	P	0 - 35

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P378769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156522	4:2 Fluorotelomer sulfonate (4:2 FTS)	14.4	Spike	P	0 - 30
2156522	6:2 Fluorotelomer sulfonate (6:2 FTS)	54.1	Spike	F	0 - 30
2156522	8:2 Fluorotelomer sulfonate (8:2 FTS)	34.9	Spike	F	0 - 30
2156522	N-Et perfluorooctanesulfonamidoAc acid	25.7	Spike	P	0 - 30
2156522	N-Me perfluorooctanesulfonamidoAc acid	36.8	Spike	F	0 - 30
2156522	Perfluorobutanesulfonic acid (PFBS)	25.6	Spike	P	0 - 30
2156522	Perfluorodecanesulfonic acid (PFDS)	25.5	Spike	P	0 - 30
2156522	Perfluorodecanoic acid (PFDA)	49.0	Spike	F	0 - 30
2156522	Perfluorododecanoic acid (PFDoA)	18.9	Spike	P	0 - 30
2156522	Perfluoroheptanesulfonic acid (PFHpS)	23.0	Spike	P	0 - 30
2156522	Perfluoroheptanoic acid (PFHpA)	47.9	Spike	F	0 - 30
2156522	Perfluorohexanesulfonic acid (PFHxS)	26.7	Spike	P	0 - 30
2156522	Perfluorohexanoic acid (PFHxA)	39.0	Spike	F	0 - 30
2156522	Perfluorononanesulfonic acid (PFNS)	29.7	Spike	P	0 - 30
2156522	Perfluorononanoic acid (PFNA)	20.6	Spike	P	0 - 30
2156522	Perfluorooctanesulfonic acid (PFOS)	36.9	Spike	F	0 - 30
2156522	Perfluorooctanoic acid (PFOA)	42.2	Spike	F	0 - 30
2156522	Perfluoropentanesulfonic acid (PFPeS)	18.0	Spike	P	0 - 30
2156522	Perfluoropentanoic acid (PFPeA)	24.7	Spike	P	0 - 30
2156522	Perfluorotetradecanoic acid (PFTeA)	79.8	Spike	F	0 - 30
2156522	Perfluorotridecanoic acid (PFTriA)	53.4	Spike	F	0 - 30
2156522	Perfluoroundecanoic acid (PFUnA)	14.3	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P378998

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156027	4:2 Fluorotelomer sulfonate (4:2 FTS)	41.1	Spike	F	0 - 35
2156027	6:2 Fluorotelomer sulfonate (6:2 FTS)	51.1	Spike	F	0 - 35
2156027	8:2 Fluorotelomer sulfonate (8:2 FTS)	44.7	Spike	F	0 - 35
2156027	N-Et perfluorooctanesulfonamidoAc acid	45.1	Spike	F	0 - 35
2156027	N-Me perfluorooctanesulfonamidoAc acid	46.5	Spike	F	0 - 35
2156027	Perfluorobutanesulfonic acid (PFBS)	46.5	Spike	F	0 - 35
2156027	Perfluorodecanesulfonic acid (PFDS)	41.0	Spike	F	0 - 35
2156027	Perfluorodecanoic acid (PFDA)	49.3	Spike	F	0 - 35
2156027	Perfluorododecanoic acid (PFDoA)	45.2	Spike	F	0 - 35
2156027	Perfluoroheptanesulfonic acid (PFHpS)	36.2	Spike	F	0 - 35
2156027	Perfluoroheptanoic acid (PFHpA)	51.0	Spike	F	0 - 35
2156027	Perfluorohexanesulfonic acid (PFHxS)	43.7	Spike	F	0 - 35
2156027	Perfluorohexanoic acid (PFHxA)	52.4	Spike	F	0 - 35
2156027	Perfluorononanesulfonic acid (PFNS)	50.5	Spike	F	0 - 35
2156027	Perfluorononanoic acid (PFNA)	44.6	Spike	F	0 - 35
2156027	Perfluorooctanesulfonic acid (PFOS)	45.2	Spike	F	0 - 35
2156027	Perfluorooctanoic acid (PFOA)	53.9	Spike	F	0 - 35
2156027	Perfluoropentanesulfonic acid (PFPeS)	35.7	Spike	F	0 - 35
2156027	Perfluoropentanoic acid (PFPeA)	46.9	Spike	F	0 - 35
2156027	Perfluorotetradecanoic acid (PFTeA)	15.3	Spike	P	0 - 35
2156027	Perfluorotridecanoic acid (PFTriA)	15.7	Spike	P	0 - 35
2156027	Perfluoroundecanoic acid (PFUnA)	44.1	Spike	F	0 - 35

Quality Assurance Report Precision

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2155846
Field Sample ID: SB-14 (4-5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Hexafluoropropylene oxide dimer acid-13C	96.9	P	30 - 160
EPA 8321B	Perfluorobutanesulfonate-13C	115	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	123	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	106	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	103	P	30 - 160

Lab Sample ID: 2155847
Field Sample ID: SB-15 (0-0.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Hexafluoropropylene oxide dimer acid-13C	89.7	P	30 - 160
EPA 8321B	Perfluorobutanesulfonate-13C	115	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	117	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	90.0	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	108	P	30 - 160

Lab Sample ID: 2155848
Field Sample ID: SB-15 (0.5-2)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Hexafluoropropylene oxide dimer acid-13C	120	P	30 - 160
EPA 8321B	Perfluorobutanesulfonate-13C	134	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	133	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	102	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	147	P	30 - 160

Lab Sample ID: 2155849
Field Sample ID: SB-15 (2-4)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Hexafluoropropylene oxide dimer acid-13C	107	P	30 - 160
EPA 8321B	Perfluorobutanesulfonate-13C	126	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	128	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	92.3	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	134	P	30 - 160

Lab Sample ID: 2155850
Field Sample ID: SB-15 (4-5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Hexafluoropropylene oxide dimer acid-13C	99.4	P	30 - 160
EPA 8321B	Perfluorobutanesulfonate-13C	109	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	109	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	81.7	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	150	P	30 - 160

Lab Sample ID: 2155851
Field Sample ID: SB-16 (0-0.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Hexafluoropropylene oxide dimer acid-13C	103	P	30 - 160
EPA 8321B	Perfluorobutanesulfonate-13C	120	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2155851
Field Sample ID: SB-16 (0-0.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorodecanoic acid-13C	120	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	103	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	127	P	30 - 160

Lab Sample ID: 2155852
Field Sample ID: SB-16 (0.5-2)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Hexafluoropropylene oxide dimer acid-13C	104	P	30 - 160
EPA 8321B	Perfluorobutanesulfonate-13C	109	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	128	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	85.4	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	125	P	30 - 160

Lab Sample ID: 2155853
Field Sample ID: SB-16 (2-4)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Hexafluoropropylene oxide dimer acid-13C	90.6	P	30 - 160
EPA 8321B	Perfluorobutanesulfonate-13C	99.6	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	113	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	88.9	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	96.1	P	30 - 160

Lab Sample ID: 2155854
Field Sample ID: SB-16 (4-5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Hexafluoropropylene oxide dimer acid-13C	113	P	30 - 160
EPA 8321B	Perfluorobutanesulfonate-13C	97.4	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	131	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	73.4	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	138	P	30 - 160

Lab Sample ID: 2155855
Field Sample ID: SB-17 (0.5-2)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Hexafluoropropylene oxide dimer acid-13C	90.4	P	30 - 160
EPA 8321B	Perfluorobutanesulfonate-13C	105	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	97.8	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	76.9	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	125	P	30 - 160

Lab Sample ID: 2155856
Field Sample ID: SB-17 (0-0.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Hexafluoropropylene oxide dimer acid-13C	114	P	30 - 160
EPA 8321B	Perfluorobutanesulfonate-13C	124	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	117	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	119	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2155856
 Field Sample ID: SB-17 (0-0.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorohexanoic acid-13C	119	P	30 - 160

Lab Sample ID: 2155857
 Field Sample ID: SB-17 (2-4)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Hexafluoropropylene oxide dimer acid-13C	97.0	P	30 - 160
EPA 8321B	Perfluorobutanesulfonate-13C	77.4	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	103	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	60.6	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	116	P	30 - 160

Lab Sample ID: 2155858
 Field Sample ID: SB-3 (0-0.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Hexafluoropropylene oxide dimer acid-13C	94.5	P	30 - 160
EPA 8321B	Perfluorobutanesulfonate-13C	100	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	90.6	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	75.8	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	108	P	30 - 160

Lab Sample ID: 2155859
 Field Sample ID: SB-3 (0.5-2)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Hexafluoropropylene oxide dimer acid-13C	97.9	P	30 - 160
EPA 8321B	Perfluorobutanesulfonate-13C	114	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	130	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	91.8	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	123	P	30 - 160

Lab Sample ID: 2155860
 Field Sample ID: SB-3 (2-4)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	144	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	154	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	147	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	142	P	30 - 160

Lab Sample ID: 2155861
 Field Sample ID: SB-3 (4-5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	155	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	119	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	158	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	113	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2155862
 Field Sample ID: SB-4 (0-0.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	145	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	128	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	156	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	126	P	30 - 160

Lab Sample ID: 2155863
 Field Sample ID: SB-4 (0.5-2)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	110	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	114	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	105	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	100	P	30 - 160

Lab Sample ID: 2155864
 Field Sample ID: SB-4 (2-4)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	136	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	109	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	136	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	109	P	30 - 160

Lab Sample ID: 2155865
 Field Sample ID: SB-4 (4-5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	147	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	119	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	131	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	130	P	30 - 160

Lab Sample ID: 2155904
 Field Sample ID: SB-5 (0-0.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	123	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	125	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	117	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	93.4	P	30 - 160

Lab Sample ID: 2155905
 Field Sample ID: SB-5 (0.5-2)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	154	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	148	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	146	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	149	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2155906
Field Sample ID: SB-5 (2-4)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	102	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	102	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	102	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	86.7	P	30 - 160

Lab Sample ID: 2155907
Field Sample ID: SB-5 (4-5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	142	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	143	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	91.3	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	87.0	P	30 - 160

Lab Sample ID: 2155908
Field Sample ID: SB-17 (4-5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	123	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	122	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	113	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	82.2	P	30 - 160

Lab Sample ID: 2155909
Field Sample ID: SB-19 (0-0.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	148	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	149	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	139	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	121	P	30 - 160

Lab Sample ID: 2155910
Field Sample ID: SB-19 (0.5-2)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	120	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	124	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	143	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	152	P	30 - 160

Lab Sample ID: 2155911
Field Sample ID: SB-19 (2-3)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	114	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	123	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	108	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	106	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2155912
 Field Sample ID: SB-22 (0-0.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	110	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	102	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	103	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	88.5	P	30 - 160

Lab Sample ID: 2155913
 Field Sample ID: SB-22 (0.5-2)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	129	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	124	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	126	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	155	P	30 - 160

Lab Sample ID: 2155914
 Field Sample ID: SB-22 (2-4)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	97.1	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	91.5	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	93.3	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	82.7	P	30 - 160

Lab Sample ID: 2155915
 Field Sample ID: SB-22 (4-5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	107	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	103	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	101	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	102	P	30 - 160

Lab Sample ID: 2155916
 Field Sample ID: SB-1 (2-4)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	148	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	157	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	142	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	124	P	30 - 160

Lab Sample ID: 2155917
 Field Sample ID: SB-1 (4-5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	101	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	95.2	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	100	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	93.7	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2155918
 Field Sample ID: SB-2 (2-4)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	109	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	135	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	106	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	117	P	30 - 160

Lab Sample ID: 2155919
 Field Sample ID: SB-2 (4-5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	109	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	98.8	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	131	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	146	P	30 - 160

Lab Sample ID: 2155920
 Field Sample ID: SB-12 (0-0.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	117	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	113	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	115	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	107	P	30 - 160

Lab Sample ID: 2155921
 Field Sample ID: SB-12 (0.5-2)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	103	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	119	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	120	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	128	P	30 - 160

Lab Sample ID: 2155922
 Field Sample ID: SB-12 (2-4)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	109	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	130	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	92.7	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	84.9	P	30 - 160

Lab Sample ID: 2155949
 Field Sample ID: EQB-4

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	88.6	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	107	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	85.8	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	73.0	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2155970
 Field Sample ID: SB-12 (4-5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	81.3	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	85.3	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	93.4	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	89.8	P	30 - 160

Lab Sample ID: 2155971
 Field Sample ID: SB-13 (0-0.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	99.4	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	119	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	86.5	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	78.9	P	30 - 160

Lab Sample ID: 2155972
 Field Sample ID: SB-13 (0.5-2)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	142	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	138	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	125	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	129	P	30 - 160

Lab Sample ID: 2155973
 Field Sample ID: SB-13 (2-4)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	100	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	117	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	93.1	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	87.4	P	30 - 160

Lab Sample ID: 2155974
 Field Sample ID: SB-13 (4-5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	116	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	118	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	113	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	121	P	30 - 160

Lab Sample ID: 2155975
 Field Sample ID: SB-14 (0-0.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	135	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	146	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	131	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	128	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2155976
Field Sample ID: SB-14 (0.5-2)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	104	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	125	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	109	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	112	P	30 - 160

Lab Sample ID: 2155977
Field Sample ID: SB-14 (2-4)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	123	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	122	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	99.7	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	120	P	30 - 160

Lab Sample ID: 2155978
Field Sample ID: SB-6 (2-3)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	104	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	115	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	121	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	131	P	30 - 160

Lab Sample ID: 2155979
Field Sample ID: SB-9 (0-0.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	106	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	92.4	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	104	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	89.4	P	30 - 160

Lab Sample ID: 2155980
Field Sample ID: SB-9 (0.5-2)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	98.0	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	98.6	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	92.1	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	82.4	P	30 - 160

Lab Sample ID: 2155981
Field Sample ID: SB-9 (2-4)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	99.9	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	109	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	135	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	124	P	30 - 160

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Lab Sample ID: 2155982
Field Sample ID: SB-9 (4-5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	119	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	141	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	109	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	87.8	P	30 - 160

Lab Sample ID: 2155983
Field Sample ID: SB-10 (0-0.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	127	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	132	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	126	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	74.2	P	30 - 160

Lab Sample ID: 2155984
Field Sample ID: SB-10 (0.5-2)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	137	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	132	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	133	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	107	P	30 - 160

Lab Sample ID: 2155985
Field Sample ID: SB-10 (2-4)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	125	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	116	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	101	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	110	P	30 - 160

Lab Sample ID: 2155986
Field Sample ID: SB-10 (4-4.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	75.5	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	116	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	69.5	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	59.9	P	30 - 160

Lab Sample ID: 2155987
Field Sample ID: SB-11 (0-0.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	133	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	127	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	101	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	133	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2155988
Field Sample ID: Drilling Water

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	101	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	135	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	92.2	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	80.1	P	30 - 160

Lab Sample ID: 2155989
Field Sample ID: EQB-5

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	103	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	156	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	97.3	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	78.1	P	30 - 160

Lab Sample ID: 2156010
Field Sample ID: SB-11 (0.5-2)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	124	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	126	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	96.4	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	109	P	30 - 160

Lab Sample ID: 2156011
Field Sample ID: SB-11 (2-4)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	103	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	97.3	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	82.5	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	78.3	P	30 - 160

Lab Sample ID: 2156012
Field Sample ID: SB-11 (4-5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	141	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	118	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	105	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	121	P	30 - 160

Lab Sample ID: 2156013
Field Sample ID: SB-20 (0-0.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	138	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	133	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	107	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	124	P	30 - 160

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Lab Sample ID: 2156014
Field Sample ID: SB-20 (0.5-2)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	128	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	144	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	101	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	112	P	30 - 160

Lab Sample ID: 2156015
Field Sample ID: SB-20 (2-4)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	116	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	105	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	92.1	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	95.8	P	30 - 160

Lab Sample ID: 2156016
Field Sample ID: SB-20 (4-4.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	144	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	116	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	115	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	133	P	30 - 160

Lab Sample ID: 2156017
Field Sample ID: SB-21 (0-0.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	91.9	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	99.2	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	79.0	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	82.3	P	30 - 160

Lab Sample ID: 2156018
Field Sample ID: SB-21 (0.5-2)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	121	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	116	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	97.4	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	97.0	P	30 - 160

Lab Sample ID: 2156019
Field Sample ID: SB-21 (2-4)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	106	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	120	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	87.6	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	81.6	P	30 - 160

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Lab Sample ID: 2156020
Field Sample ID: SB-21 (4-5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	133	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	96.2	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	120	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	116	P	30 - 160

Lab Sample ID: 2156021
Field Sample ID: SB-23 (0-0.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	141	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	114	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	125	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	130	P	30 - 160

Lab Sample ID: 2156022
Field Sample ID: SB-7 (2-4)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	140	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	136	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	120	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	126	P	30 - 160

Lab Sample ID: 2156023
Field Sample ID: SB-7 (4-5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	119	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	119	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	103	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	110	P	30 - 160

Lab Sample ID: 2156024
Field Sample ID: SB-18 (0-0.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	140	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	101	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	116	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	106	P	30 - 160

Lab Sample ID: 2156025
Field Sample ID: SB-18 (0.5-2)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	105	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	112	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	93.4	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	111	P	30 - 160

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Lab Sample ID: 2156026
Field Sample ID: SB-18 (2-4)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	107	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	129	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	95.6	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	144	P	30 - 160

Lab Sample ID: 2156027
Field Sample ID: SB-18 (4-5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	143	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	128	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	113	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	119	P	30 - 160

Lab Sample ID: 2156028
Field Sample ID: SB-23 (0.5-2)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	96.1	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	82.9	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	85.5	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	84.7	P	30 - 160

Lab Sample ID: 2156029
Field Sample ID: FRB-2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	119	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	126	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	114	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	89.7	P	30 - 160

Lab Sample ID: 2156050
Field Sample ID: SB-23 (2-4)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	109	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	106	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	86.1	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	84.4	P	30 - 160

Lab Sample ID: 2156051
Field Sample ID: SB-8 (0-0.5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	137	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	104	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	111	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	120	P	30 - 160

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Lab Sample ID: 2156052
Field Sample ID: SB-8 (0.5-2)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	112	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	97.3	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	102	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	89.8	P	30 - 160

Lab Sample ID: 2156053
Field Sample ID: SB-8 (2-4)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	121	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	105	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	104	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	111	P	30 - 160

Lab Sample ID: 2156054
Field Sample ID: SB-8 (4-5)

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	121	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	155	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	113	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	137	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A97565

Included Lab Sample IDs: 2155846, 2155847, 2155848, 2155849, 2155850, 2155851, 2155852, 2155853, 2155854, 2155855, 2155856, 2155857, 2155858, 2155859, 2155977

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	114	107	P/P	60 - 160
4:2 Fluorotelomer sulfonate (4:2 FTS)	150	109	P/P	60 - 160
4:2 Fluorotelomer sulfonate (4:2 FTS)	86.0	68.0	P/P	60 - 160
4:2 Fluorotelomer sulfonate (4:2 FTS)	92.2	86.0	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	111	91.5	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	138	111	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	75.6	60.1	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	96.3	95.5	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	113	111	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	90.0	79.3	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	97.4	99.3	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	99.3	90.0	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	85.7	76.8	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	85.9	91.6	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	91.6	85.7	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	92.9	87.1	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	183*	150	F/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	82.5	73.8	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	92.7	82.5	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	99.9	94.7	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	102	89.8	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	114	93.7	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	81.3	72.9	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	89.9	81.3	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	89.1	82.6	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	91.8	96.1	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	96.1	89.1	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	99.1	89.6	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	113	117	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	87.1	63.7	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	94.7	98.7	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	98.7	87.1	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	109	110	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	110	125	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	125	109	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	87.6	72.1	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	105	92.8	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	88.1	80.3	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	89.0	94.2	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	94.2	88.1	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	101	93.7	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	105	91.1	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	120	101	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	89.8	63.2	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	108	92.5	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	77.5	78.4	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	78.4	79.0	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	84.6	77.5	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	105	113	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	84.2	94.5	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A97565

Included Lab Sample IDs: 2155846, 2155847, 2155848, 2155849, 2155850, 2155851, 2155852, 2155853, 2155854, 2155855, 2155856, 2155857, 2155858, 2155859, 2155977

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Perfluorohexanoic acid (PFHxA)	94.5	105	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	94.7	81.9	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	102	97.4	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	68.5	62.5	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	85.0	68.5	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	90.0	76.9	P/P	60 - 160
Perfluorononanoic acid (PFNA)	108	91.5	P/P	60 - 160
Perfluorononanoic acid (PFNA)	132	107	P/P	60 - 160
Perfluorononanoic acid (PFNA)	91.5	103	P/P	60 - 160
Perfluorononanoic acid (PFNA)	94.3	108	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	73.3	67.8	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	87.6	83.4	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	87.9	73.3	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	92.0	76.8	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	112	65.1	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	65.1	68.3	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	75.3	92.1	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	91.5	79.1	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	108	99.6	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	119	96.2	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	83.2	73.7	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	87.8	83.2	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	102	99.7	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	105	90.0	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	87.7	105	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	91.5	87.7	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	65.7	102	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	79.8	93.3	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	93.3	65.7	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	99.3	95.4	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	105	118	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	75.3	61.2	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	85.0	88.3	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	88.3	75.3	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	65.9	69.9	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	69.9	82.0	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	91.1	65.9	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	91.8	80.4	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A97642

Included Lab Sample IDs: 2155860, 2155861, 2155862, 2155863, 2155864, 2155865, 2155904, 2155905, 2155906, 2155907, 2155908, 2155909, 2155910, 2155911, 2155912, 2155913, 2155914, 2155915, 2155916, 2155917, 2155918, 2155919, 2155920, 2155921, 2155922, 2155970, 2155971, 2155972, 2155973, 2155974, 2155975, 2155976, 2155978, 2155979, 2155980, 2155981, 2155982, 2155983, 2155984

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	103	129	P/P	60 - 160
4:2 Fluorotelomer sulfonate (4:2 FTS)	108	96.3	P/P	60 - 160
4:2 Fluorotelomer sulfonate (4:2 FTS)	112	89.5	P/P	60 - 160
4:2 Fluorotelomer sulfonate (4:2 FTS)	129	84.2	P/P	60 - 160
4:2 Fluorotelomer sulfonate (4:2 FTS)	84.2	112	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A97642

Included Lab Sample IDs: 2155860, 2155861, 2155862, 2155863, 2155864, 2155865, 2155904, 2155905, 2155906, 2155907, 2155908, 2155909, 2155910, 2155911, 2155912, 2155913, 2155914, 2155915, 2155916, 2155917, 2155918, 2155919, 2155920, 2155921, 2155922, 2155970, 2155971, 2155972, 2155973, 2155974, 2155975, 2155976, 2155978, 2155979, 2155980, 2155981, 2155982, 2155983, 2155984

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	96.3	103	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	105	99.6	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	106	109	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	109	143	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	139	65.5	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	88.6	139	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	99.6	143	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	111	136	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	111	108	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	118	111	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	151	61.3	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	88.1	151	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	94.8	111	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	102	119	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	119	146	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	146	90.7	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	90.7	91.9	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	91.9	104	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	94.6	102	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	111	133	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	133	83.1	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	83.1	94.7	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	92.4	111	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	94.7	99.1	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	98.8	92.4	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	103	88.4	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	106	95.0	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	78.8	91.5	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	88.4	106	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	91.5	89.3	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	95.0	78.8	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	112	86.0	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	76.1	90.9	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	86.0	76.1	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	90.9	92.6	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	92.6	85.5	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	94.4	112	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	98.0	94.4	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	106	89.4	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	115	98.7	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	117	90.8	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	89.4	94.6	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	90.8	106	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	94.6	115	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	98.7	83.6	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	102	116	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	106	72.7	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	108	77.2	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	116	92.4	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A97642

Included Lab Sample IDs: 2155860, 2155861, 2155862, 2155863, 2155864, 2155865, 2155904, 2155905, 2155906, 2155907, 2155908, 2155909, 2155910, 2155911, 2155912, 2155913, 2155914, 2155915, 2155916, 2155917, 2155918, 2155919, 2155920, 2155921, 2155922, 2155970, 2155971, 2155972, 2155973, 2155974, 2155975, 2155976, 2155978, 2155979, 2155980, 2155981, 2155982, 2155983, 2155984

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Perfluorododecanoic acid (PFDoA)	77.2	106	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	92.4	108	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	98.1	102	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	101	89.7	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	107	82.9	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	77.2	88.0	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	82.9	77.2	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	88.0	78.5	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	89.7	107	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	102	84.3	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	116	102	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	124	102	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	68.8	116	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	78.2	124	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	84.3	68.8	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	85.5	78.2	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	102	140	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	120	102	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	125	158	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	131	120	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	140	121	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	158	131	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	93.6	125	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	123	96.2	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	148	123	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	74.9	91.6	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	86.3	148	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	90.5	86.3	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	91.6	90.6	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	96.2	74.9	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	116	95.1	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	119	143	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	121	116	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	143	121	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	95.1	141	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	97.0	119	P/P	60 - 160
Perfluorononanoic acid (PFNA)	104	98.7	P/P	60 - 160
Perfluorononanoic acid (PFNA)	105	120	P/P	60 - 160
Perfluorononanoic acid (PFNA)	119	104	P/P	60 - 160
Perfluorononanoic acid (PFNA)	120	119	P/P	60 - 160
Perfluorononanoic acid (PFNA)	139	82.9	P/P	60 - 160
Perfluorononanoic acid (PFNA)	82.9	96.7	P/P	60 - 160
Perfluorononanoic acid (PFNA)	98.7	139	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	101	92.7	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	110	133	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	114	101	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	130	107	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	133	114	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	92.7	130	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A97642

Included Lab Sample IDs: 2155860, 2155861, 2155862, 2155863, 2155864, 2155865, 2155904, 2155905, 2155906, 2155907, 2155908, 2155909, 2155910, 2155911, 2155912, 2155913, 2155914, 2155915, 2155916, 2155917, 2155918, 2155919, 2155920, 2155921, 2155922, 2155970, 2155971, 2155972, 2155973, 2155974, 2155975, 2155976, 2155978, 2155979, 2155980, 2155981, 2155982, 2155983, 2155984

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Perfluorooctanesulfonic acid (PFOS)	98.2	110	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	109	83.5	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	75.7	82.7	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	76.6	109	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	82.7	85.7	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	83.5	75.7	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	85.7	99.4	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	99.6	76.6	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	107	90.1	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	108	87.9	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	80.9	92.7	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	87.9	107	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	90.1	80.9	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	92.7	87.1	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	111	114	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	114	158	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	116	89.3	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	121	86.1	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	126	121	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	158	126	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	86.1	116	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	102	98.0	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	103	102	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	115	121	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	121	93.1	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	88.1	115	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	89.4	103	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	93.1	89.4	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	104	81.1	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	115	87.9	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	115	82.8	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	77.0	104	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	82.8	89.4	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	87.9	115	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	89.4	77.0	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	103	134	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	105	92.6	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	134	105	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	76.8	93.3	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	89.3	103	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	92.6	76.8	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	93.3	124	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A97947

Included Lab Sample IDs: 2156017, 2156019, 2156021, 2156025, 2156026, 2156054

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	95.5	89.7	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A97947

Included Lab Sample IDs: 2156017, 2156019, 2156021, 2156025, 2156026, 2156054

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
6:2 Fluorotelomer sulfonate (6:2 FTS)	72.9	97.7	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	105	142	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	88.3	98.6	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	85.2	106	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	100	102	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	81.9	97.6	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	87.3	79.5	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	77.5	98.6	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	69.7	78.9	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	78.9	102	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	83.2	82.6	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	112	109	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	79.8	84.4	P/P	60 - 160
Perfluorononanoic acid (PFNA)	69.1	103	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	77.2	79.9	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	117	148	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	96.9	99.5	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	68.3	70.8	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	88.6	78.5	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	106	114	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	79.5	130	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A97952

Included Lab Sample IDs: 2155949, 2155988, 2155989, 2156029

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	106	134	P/P	60 - 160
4:2 Fluorotelomer sulfonate (4:2 FTS)	134	120	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	79.8	92.4	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	92.4	81.5	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	118	108	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	97.9	118	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	76.1	90.4	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	90.4	88.0	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	76.3	98.0	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	98.0	91.4	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	110	129	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	129	117	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	104	127	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	127	113	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	71.9	89.0	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	89.0	78.2	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	101	90.0	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	80.7	101	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	105	91.7	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	84.2	105	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	75.6	97.8	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	97.8	81.1	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	120	105	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	99.1	120	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A97952

Included Lab Sample IDs: 2155949, 2155988, 2155989, 2156029

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Perfluorohexanoic acid (PFHxA)	119	90.4	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	91.9	119	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	101	88.6	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	85.7	101	P/P	60 - 160
Perfluorononanoic acid (PFNA)	85.3	85.0	P/P	60 - 160
Perfluorononanoic acid (PFNA)	97.7	85.3	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	103	90.8	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	81.8	103	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	107	84.6	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	87.7	107	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	109	100	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	92.9	109	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	69.4	90.3	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	90.3	76.0	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	108	85.6	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	78.7	108	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	61.1	89.0	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	89.0	74.1	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	135	152	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	152	156	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A98008

Included Lab Sample IDs: 2155985, 2155986, 2155987, 2156010, 2156011, 2156012, 2156013, 2156014, 2156015, 2156016, 2156018, 2156020, 2156022, 2156023, 2156024, 2156027, 2156028, 2156050, 2156051, 2156052, 2156053

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	105	98.9	P/P	60 - 160
4:2 Fluorotelomer sulfonate (4:2 FTS)	77.3	85.5	P/P	60 - 160
4:2 Fluorotelomer sulfonate (4:2 FTS)	84.2	77.3	P/P	60 - 160
4:2 Fluorotelomer sulfonate (4:2 FTS)	98.5	109	P/P	60 - 160
4:2 Fluorotelomer sulfonate (4:2 FTS)	98.9	98.5	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	120	120	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	77.0	87.2	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	82.4	120	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	87.2	106	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	87.8	77.0	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	111	80.7	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	113	122	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	80.7	84.3	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	82.9	113	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	84.3	97.6	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	78.2	89.4	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	86.0	90.3	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	87.1	86.0	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	89.4	93.9	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	90.3	100	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	111	126	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	82.5	111	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	86.9	92.6	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	92.6	105	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A98008

Included Lab Sample IDs: 2155985, 2155986, 2155987, 2156010, 2156011, 2156012, 2156013, 2156014, 2156015, 2156016, 2156018, 2156020, 2156022, 2156023, 2156024, 2156027, 2156028, 2156050, 2156051, 2156052, 2156053

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
N-Me perfluorooctanesulfonamidoAc acid	94.7	86.9	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	113	122	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	122	132	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	81.7	92.2	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	89.8	81.7	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	92.2	113	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	87.3	95.7	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	87.7	97.5	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	89.6	87.3	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	95.7	101	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	97.5	104	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	117	74.3	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	125	120	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	74.3	99.9	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	86.9	125	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	99.9	97.6	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	106	128	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	123	114	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	82.5	98.3	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	97.7	123	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	98.3	106	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	78.0	86.5	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	86.5	84.1	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	90.1	96.3	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	92.8	90.1	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	96.3	99.4	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	102	107	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	107	106	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	132	117	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	66.6	132	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	91.1	102	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	106	136	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	108	133	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	133	137	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	92.5	96.6	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	96.6	106	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	106	136	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	125	159	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	159	158	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	74.6	106	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	81.9	74.6	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	106	130	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	122	127	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	90.2	106	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	95.5	90.2	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	98.4	122	P/P	60 - 160
Perfluorononanoic acid (PFNA)	100	81.0	P/P	60 - 160
Perfluorononanoic acid (PFNA)	106	71.3	P/P	60 - 160
Perfluorononanoic acid (PFNA)	63.8	80.2	P/P	60 - 160
Perfluorononanoic acid (PFNA)	71.3	100	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A98008

Included Lab Sample IDs: 2155985, 2155986, 2155987, 2156010, 2156011, 2156012, 2156013, 2156014, 2156015, 2156016, 2156018, 2156020, 2156022, 2156023, 2156024, 2156027, 2156028, 2156050, 2156051, 2156052, 2156053

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Perfluorononanoic acid (PFNA)	80.2	68.0	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	117	119	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	82.4	93.2	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	89.3	82.4	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	92.7	117	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	93.2	114	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	61.1	95.2	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	84.4	82.1	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	86.1	84.4	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	92.1	86.1	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	95.2	99.8	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	102	107	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	90.4	102	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	92.3	96.7	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	94.2	90.4	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	96.7	95.6	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	123	132	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	72.3	93.2	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	91.2	72.3	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	93.2	97.5	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	97.5	123	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	115	121	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	89.5	91.2	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	91.2	98.2	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	92.7	115	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	98.2	105	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	109	76.7	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	127	112	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	76.7	80.3	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	77.3	127	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	80.3	95.4	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	113	130	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	130	118	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	80.4	85.7	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	85.7	98.9	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	98.9	108	P/P	60 - 160

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 8321B	4:2 Fluorotelomer sulfonate (4:2 FTS)	89.5	118	106		11.1
	4:2 Fluorotelomer sulfonate (4:2 FTS)	119	137	134		2.29
	4:2 Fluorotelomer sulfonate (4:2 FTS)	102	118	172		37.3
	4:2 Fluorotelomer sulfonate (4:2 FTS)	111	143	138		3.92
	4:2 Fluorotelomer sulfonate (4:2 FTS)	149	143	166		14.4
	4:2 Fluorotelomer sulfonate (4:2 FTS)	75.9	65.3	99.1		41.1
	6:2 Fluorotelomer sulfonate (6:2 FTS)	66.8	88.3	78.8		11.4
	6:2 Fluorotelomer sulfonate (6:2 FTS)	129	141	159		12.1
	6:2 Fluorotelomer sulfonate (6:2 FTS)	90.6				11.4
	6:2 Fluorotelomer sulfonate (6:2 FTS)	87.6	122	103		17.1
	6:2 Fluorotelomer sulfonate (6:2 FTS)	153	141	246		54.1
	6:2 Fluorotelomer sulfonate (6:2 FTS)	68.6	54.0	91.0		51.1
	8:2 Fluorotelomer sulfonate (8:2 FTS)	99.7	126	136		8.13
	8:2 Fluorotelomer sulfonate (8:2 FTS)	126	163	162		0.577
	8:2 Fluorotelomer sulfonate (8:2 FTS)	74.8	88.0	154		34.2
	8:2 Fluorotelomer sulfonate (8:2 FTS)	123	167	148		12.3
	8:2 Fluorotelomer sulfonate (8:2 FTS)	96.7	105	149		34.9
	8:2 Fluorotelomer sulfonate (8:2 FTS)	75.8	96.6	61.3		44.7
	N-Et perfluorooctanesulfonamidoAc acid	89.1	109	118		7.67
	N-Et perfluorooctanesulfonamidoAc acid	113	106	118		10.8
	N-Et perfluorooctanesulfonamidoAc acid	110	95.0	114		18.2
	N-Et perfluorooctanesulfonamidoAc acid	104	90.5	92.2		1.84
	N-Et perfluorooctanesulfonamidoAc acid	93.0	76.8	99.3		25.7
	N-Et perfluorooctanesulfonamidoAc acid	71.0	55.5	87.8		45.1
	N-Me perfluorooctanesulfonamidoAc acid	83.5	106	106		0.456
	N-Me perfluorooctanesulfonamidoAc acid	100	106	108		1.79
	N-Me perfluorooctanesulfonamidoAc acid	98.9	84.1	104		20.9
	N-Me perfluorooctanesulfonamidoAc acid	102	120	111		7.71
	N-Me perfluorooctanesulfonamidoAc acid	102	87.8	127		36.8
	N-Me perfluorooctanesulfonamidoAc acid	70.5	60.9	97.7		46.5

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 8321B	Perfluorobutanesulfonic acid (PFBS)	93.0	117	117		0.0752
	Perfluorobutanesulfonic acid (PFBS)	111	124	125		0.800
	Perfluorobutanesulfonic acid (PFBS)	103	110	146		28.0
	Perfluorobutanesulfonic acid (PFBS)	154	130	126		3.76
	Perfluorobutanesulfonic acid (PFBS)	139	148	197		25.6
	Perfluorobutanesulfonic acid (PFBS)	101	79.5	128		46.5
	Perfluorodecanesulfonic acid (PFDS)	93.8	114	130		13.0
	Perfluorodecanesulfonic acid (PFDS)	116	124	131		5.05
	Perfluorodecanesulfonic acid (PFDS)	96.2	104	129		20.8
	Perfluorodecanesulfonic acid (PFDS)	129	103	104		0.479
	Perfluorodecanesulfonic acid (PFDS)	112	82.9	107		25.5
	Perfluorodecanesulfonic acid (PFDS)	83.4	65.7	99.6		41.0
	Perfluorodecanoic acid (PFDA)	81.6	124	162		26.9
	Perfluorodecanoic acid (PFDA)	108	134	135		1.02
	Perfluorodecanoic acid (PFDA)	109	110	128		14.8
	Perfluorodecanoic acid (PFDA)	115	151	124		18.3
	Perfluorodecanoic acid (PFDA)	92.6	75.2	124		49.0
	Perfluorodecanoic acid (PFDA)	84.2	60.3	105		49.3
	Perfluorododecanoic acid (PFDoA)	79.9	76.7	89.0		14.8
	Perfluorododecanoic acid (PFDoA)	99.4	94.5	122		25.5
	Perfluorododecanoic acid (PFDoA)	131	135	110		20.3
	Perfluorododecanoic acid (PFDoA)	122	126	113		10.6
	Perfluorododecanoic acid (PFDoA)	90.2	85.7	104		18.9
	Perfluorododecanoic acid (PFDoA)	94.9	74.0	117		45.2
	Perfluoroheptanesulfonic acid (PFHpS)	97.2	116	139		18.3
	Perfluoroheptanesulfonic acid (PFHpS)	112	122	125		2.07
	Perfluoroheptanesulfonic acid (PFHpS)	87.7	96.8	128		27.5
	Perfluoroheptanesulfonic acid (PFHpS)	116	94.1	91.4		2.88
	Perfluoroheptanesulfonic acid (PFHpS)	105	101	128		23.0
	Perfluoroheptanesulfonic acid (PFHpS)	74.6	90.3	62.6		36.2
	Perfluoroheptanoic acid (PFHpA)	60.4	92.8	87.2		5.54
	Perfluoroheptanoic acid (PFHpA)	111	104	113		6.81
	Perfluoroheptanoic acid (PFHpA)	131	86.4	103		6.88
	Perfluoroheptanoic acid (PFHpA)	96.5	104	86.5		18.5
Perfluoroheptanoic acid (PFHpA)	89.9	112	182		47.9	
Perfluoroheptanoic acid (PFHpA)	78.2	56.2	94.7		51.0	
Perfluorohexanesulfonic acid (PFHxS)	82.8	97.5	109		7.66	
Perfluorohexanesulfonic acid (PFHxS)	142	130	166		24.1	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 8321B	Perfluorohexanesulfonic acid (PFHxS)	145	149	140		6.02
	Perfluorohexanesulfonic acid (PFHxS)	137	101	98.4		2.47
	Perfluorohexanesulfonic acid (PFHxS)	128	149	234		26.7
	Perfluorohexanesulfonic acid (PFHxS)	102	66.8	116		43.7
	Perfluorohexanoic acid (PFHxA)	94.1	130	145		10.3
	Perfluorohexanoic acid (PFHxA)	111	108	125		12.2
	Perfluorohexanoic acid (PFHxA)	128				1.39
	Perfluorohexanoic acid (PFHxA)	142	101	104		3.31
	Perfluorohexanoic acid (PFHxA)	121	134	205		39.0
	Perfluorohexanoic acid (PFHxA)	79.4	77.4	132		52.4
	Perfluorononanesulfonic acid (PFNS)	78.0	96.2	96.3		0.126
	Perfluorononanesulfonic acid (PFNS)	134	127	154		19.5
	Perfluorononanesulfonic acid (PFNS)	149	145	141		3.13
	Perfluorononanesulfonic acid (PFNS)	116	107	90.1		17.4
	Perfluorononanesulfonic acid (PFNS)	106	90.9	123		29.7
	Perfluorononanesulfonic acid (PFNS)	89.7	70.2	118		50.5
	Perfluorononanoic acid (PFNA)	94.5	115	174		37.5
	Perfluorononanoic acid (PFNA)	139	115	116		0.280
	Perfluorononanoic acid (PFNA)	110	141	143		1.09
	Perfluorononanoic acid (PFNA)	149	114	116		1.53
	Perfluorononanoic acid (PFNA)	123	99.4	122		20.6
	Perfluorononanoic acid (PFNA)	65.3	81.4	48.9		44.6
	Perfluorooctanesulfonic acid (PFOS)	84.0	114	146		3.67
	Perfluorooctanesulfonic acid (PFOS)	127				19.9
	Perfluorooctanesulfonic acid (PFOS)	133				18.5
	Perfluorooctanesulfonic acid (PFOS)	112				15.1
	Perfluorooctanesulfonic acid (PFOS)	117	121	226		36.9
	Perfluorooctanesulfonic acid (PFOS)	84.3				45.2
	Perfluorooctanoic acid (PFOA)	87.1	120	115		4.52
	Perfluorooctanoic acid (PFOA)	111	132	130		0.617
	Perfluorooctanoic acid (PFOA)	90.6				37.7
	Perfluorooctanoic acid (PFOA)	94.7	109	85.6		23.6
	Perfluorooctanoic acid (PFOA)	134	127	200		42.2
Perfluorooctanoic acid (PFOA)	61.1	43.4	81.7		53.9	
Perfluoropentanesulfonic acid (PFPeS)	92.2	117	124		5.47	
Perfluoropentanesulfonic acid (PFPeS)	109	124	120		2.79	
Perfluoropentanesulfonic acid (PFPeS)	98.2	106	140		27.7	
Perfluoropentanesulfonic acid (PFPeS)	128	104	89.6		14.8	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 8321B	Perfluoropentanesulfonic acid (PFPeS)	109	105	129		18.0
	Perfluoropentanesulfonic acid (PFPeS)	85.7	74.1	106		35.7
	Perfluoropentanoic acid (PFPeA)	101	103	122		13.8
	Perfluoropentanoic acid (PFPeA)	125	94.6	145		30.3
	Perfluoropentanoic acid (PFPeA)	139				10.9
	Perfluoropentanoic acid (PFPeA)	135	89.6	81.8		6.46
	Perfluoropentanoic acid (PFPeA)	100	115	147		24.7
	Perfluoropentanoic acid (PFPeA)	93.2	39.2	83.6		46.9
	Perfluorotetradecanoic acid (PFTeA)	95.8	135	130		3.79
	Perfluorotetradecanoic acid (PFTeA)	134	99.8	99.7		0.0702
	Perfluorotetradecanoic acid (PFTeA)	102	95.9	125		26.4
	Perfluorotetradecanoic acid (PFTeA)	134	116	117		0.762
	Perfluorotetradecanoic acid (PFTeA)	63.6	51.4	120		79.8
	Perfluorotetradecanoic acid (PFTeA)	84.3	77.3	90.2		15.3
	Perfluorotridecanoic acid (PFTriA)	95.0	107	109		1.96
	Perfluorotridecanoic acid (PFTriA)	105	124	110		11.4
	Perfluorotridecanoic acid (PFTriA)	113	112	126		11.3
	Perfluorotridecanoic acid (PFTriA)	106	99.7	99.9		0.180
	Perfluorotridecanoic acid (PFTriA)	59.1	62.4	108		53.4
	Perfluorotridecanoic acid (PFTriA)	78.4	61.6	72.1		15.7
	Perfluoroundecanoic acid (PFUnA)	79.9	89.6	130		36.7
	Perfluoroundecanoic acid (PFUnA)	108	117	119		1.00
	Perfluoroundecanoic acid (PFUnA)	145	142	140		1.49
	Perfluoroundecanoic acid (PFUnA)	157	128	115		10.6
	Perfluoroundecanoic acid (PFUnA)	153	121	140		14.3
	Perfluoroundecanoic acid (PFUnA)	120	80.3	126		44.1

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
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Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Perfluorinated alkyl substances in sediment/solid matrices by HPLC/MS/MS	2155846, 2155847, 2155848, 2155849, 2155850, 2155851, 2155852, 2155853, 2155854, 2155855, 2155856, 2155857, 2155858, 2155859, 2155860, 2155861, 2155862, 2155863, 2155864, 2155865, 2155904, 2155905, 2155906, 2155907, 2155908, 2155909, 2155910, 2155911, 2155912, 2155913, 2155914, 2155915, 2155916, 2155917, 2155918, 2155919, 2155920, 2155921, 2155922, 2155970, 2155971, 2155972, 2155973, 2155974, 2155975, 2155976, 2155977, 2155978, 2155979, 2155980, 2155981, 2155982, 2155983, 2155984, 2155985, 2155986, 2155987, 2156010, 2156011, 2156012, 2156013, 2156014, 2156015, 2156016, 2156017, 2156018, 2156019, 2156020, 2156021, 2156022, 2156023, 2156024, 2156025, 2156026, 2156027, 2156028, 2156050, 2156051, 2156052, 2156053, 2156054
EPA 8321B SM 2540 G (20th)	Perfluorinated alkyl substances in water matrices by HPLC/MS/MS Percent solid determination before the other sample preparations.	2155949, 2155988, 2155989, 2156029, 2155866, 2155867, 2155868, 2155869, 2155870, 2155871, 2155872, 2155873, 2155874, 2155875, 2155876, 2155877, 2155878, 2155879, 2155880, 2155881, 2155882, 2155883, 2155884, 2155885, 2155950, 2155951, 2155952, 2155953, 2155954, 2155955, 2155956, 2155957, 2155958, 2155959, 2155960, 2155961, 2155962, 2155963, 2155964, 2155965, 2155967, 2155968, 2155969, 2155990, 2155991, 2155992, 2155993, 2155994, 2155995, 2155996, 2155997, 2156000, 2156001, 2156002, 2156003, 2156004, 2156005, 2156006, 2156007, 2156008, 2156009, 2156030, 2156031, 2156032, 2156033, 2156034, 2156035, 2156036, 2156037, 2156038, 2156039, 2156040, 2156041, 2156042, 2156043, 2156045, 2156046, 2156047, 2156048, 2156049, 2156055, 2156056, 2156057, 2156058, 2156059

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	02/07/2020	02/10/2020 10:30	Pramila Ghimire	02/14/2020 23:24	Mohammad Ghaffari	2155846
	02/07/2020	02/10/2020 10:30	Pramila Ghimire	02/15/2020 02:00	Mohammad Ghaffari	2155847
	02/07/2020	02/10/2020 10:30	Pramila Ghimire	02/15/2020 02:19	Mohammad Ghaffari	2155848
	02/07/2020	02/10/2020 10:30	Pramila Ghimire	02/15/2020 02:39	Mohammad Ghaffari	2155849
	02/07/2020	02/10/2020 10:30	Pramila Ghimire	02/15/2020 02:58	Mohammad Ghaffari	2155850
	02/07/2020	02/10/2020 10:30	Pramila Ghimire	02/15/2020 03:18	Mohammad Ghaffari	2155851
	02/07/2020	02/10/2020 10:30	Pramila Ghimire	02/15/2020 03:57	Mohammad Ghaffari	2155852
	02/07/2020	02/10/2020 10:30	Pramila Ghimire	02/15/2020 04:16	Mohammad Ghaffari	2155853
	02/07/2020	02/10/2020 10:30	Pramila Ghimire	02/15/2020 04:36	Mohammad Ghaffari	2155854
	02/07/2020	02/10/2020 10:30	Pramila Ghimire	02/15/2020 04:55	Mohammad Ghaffari	2155855
	02/07/2020	02/10/2020 10:30	Pramila Ghimire	02/15/2020 05:15	Mohammad Ghaffari	2155856
	02/07/2020	02/10/2020 10:30	Pramila Ghimire	02/15/2020 05:35	Mohammad Ghaffari	2155857
	02/07/2020	02/10/2020 10:30	Pramila Ghimire	02/15/2020 05:54	Mohammad Ghaffari	2155858
	02/07/2020	02/10/2020 10:30	Pramila Ghimire	02/15/2020 06:14	Mohammad Ghaffari	2155859
	02/07/2020	02/11/2020 09:00	Pramila Ghimire	02/17/2020 09:59	Mohammad Ghaffari	2155860
	02/07/2020	02/11/2020 09:00	Pramila Ghimire	02/17/2020 10:19	Mohammad Ghaffari	2155861
	02/07/2020	02/11/2020 09:00	Pramila Ghimire	02/17/2020 10:38	Mohammad Ghaffari	2155862
	02/07/2020	02/11/2020 09:00	Pramila Ghimire	02/17/2020 10:58	Mohammad Ghaffari	2155863
	02/07/2020	02/11/2020 09:00	Pramila Ghimire	02/17/2020 12:14	Mohammad Ghaffari	2155864
	02/07/2020	02/11/2020 09:00	Pramila Ghimire	02/17/2020 12:34	Mohammad Ghaffari	2155865
	02/07/2020	02/11/2020 09:00	Pramila Ghimire	02/17/2020 12:53	Mohammad Ghaffari	2155904
	02/07/2020	02/11/2020 09:00	Pramila Ghimire	02/17/2020 13:13	Mohammad Ghaffari	2155905
	02/07/2020	02/11/2020 09:00	Pramila Ghimire	02/17/2020 13:33	Mohammad Ghaffari	2155906
	02/07/2020	02/11/2020 09:00	Pramila Ghimire	02/17/2020 13:52	Mohammad Ghaffari	2155907
	02/07/2020	02/11/2020 09:00	Pramila Ghimire	02/17/2020 14:12	Mohammad Ghaffari	2155908
	02/07/2020	02/11/2020 09:00	Pramila Ghimire	02/17/2020 14:31	Mohammad Ghaffari	2155909
	02/07/2020	02/11/2020 09:00	Pramila Ghimire	02/17/2020 15:10	Mohammad Ghaffari	2155910
	02/07/2020	02/11/2020 09:00	Pramila Ghimire	02/17/2020 15:30	Mohammad Ghaffari	2155911
	02/07/2020	02/11/2020 09:00	Pramila Ghimire	02/17/2020 15:49	Mohammad Ghaffari	2155912
	02/07/2020	02/11/2020 09:00	Pramila Ghimire	02/17/2020 16:09	Mohammad Ghaffari	2155913
	02/07/2020	02/11/2020 09:00	Pramila Ghimire	02/17/2020 16:28	Mohammad Ghaffari	2155914
	02/07/2020	02/11/2020 09:00	Pramila Ghimire	02/17/2020 16:48	Mohammad Ghaffari	2155915
	02/07/2020	02/11/2020 09:00	Pramila Ghimire	02/17/2020 17:07	Mohammad Ghaffari	2155916
	02/07/2020	02/11/2020 09:00	Pramila Ghimire	02/17/2020 17:27	Mohammad Ghaffari	2155917
	02/07/2020	02/11/2020 09:00	Pramila Ghimire	02/18/2020 08:26	Mohammad Ghaffari	2155909
	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/17/2020 19:44	Mohammad Ghaffari	2155918
	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/17/2020 20:03	Mohammad Ghaffari	2155919
	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/17/2020 20:23	Mohammad Ghaffari	2155920
	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/17/2020 20:42	Mohammad Ghaffari	2155921
	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/17/2020 21:22	Mohammad Ghaffari	2155922

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/17/2020 21:41	Mohammad Ghaffari	2155970
	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/17/2020 22:01	Mohammad Ghaffari	2155971
	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/17/2020 22:20	Mohammad Ghaffari	2155972
	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/17/2020 22:40	Mohammad Ghaffari	2155973
	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/17/2020 22:59	Mohammad Ghaffari	2155974
	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/17/2020 23:19	Mohammad Ghaffari	2155975
	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/17/2020 23:38	Mohammad Ghaffari	2155976
	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/18/2020 00:37	Mohammad Ghaffari	2155978
	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/18/2020 00:57	Mohammad Ghaffari	2155979
	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/18/2020 01:16	Mohammad Ghaffari	2155980
	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/18/2020 01:36	Mohammad Ghaffari	2155981
	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/18/2020 01:55	Mohammad Ghaffari	2155982
	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/18/2020 02:15	Mohammad Ghaffari	2155983
	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/18/2020 02:34	Mohammad Ghaffari	2155984
	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/18/2020 08:45	Mohammad Ghaffari	2155983
	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/18/2020 09:05	Mohammad Ghaffari	2155984
	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/25/2020 16:11	Pramila Ghimire	2155977
	02/07/2020	02/13/2020 09:00	Pramila Ghimire	02/25/2020 16:30	Pramila Ghimire	2155977
	02/07/2020	02/17/2020 10:00	Pramila Ghimire	02/25/2020 18:28	Pramila Ghimire	2155985
	02/07/2020	02/17/2020 10:00	Pramila Ghimire	02/25/2020 18:47	Pramila Ghimire	2155986
	02/07/2020	02/17/2020 10:00	Pramila Ghimire	02/25/2020 19:07	Pramila Ghimire	2155987
	02/07/2020	02/17/2020 10:00	Pramila Ghimire	02/25/2020 19:26	Pramila Ghimire	2156010
	02/07/2020	02/17/2020 10:00	Pramila Ghimire	02/25/2020 19:46	Pramila Ghimire	2156011
	02/07/2020	02/17/2020 10:00	Pramila Ghimire	02/25/2020 20:25	Pramila Ghimire	2156012
	02/07/2020	02/17/2020 10:00	Pramila Ghimire	02/25/2020 20:44	Pramila Ghimire	2156013
	02/07/2020	02/17/2020 10:00	Pramila Ghimire	02/25/2020 21:04	Pramila Ghimire	2156014
	02/07/2020	02/17/2020 10:00	Pramila Ghimire	02/25/2020 21:23	Pramila Ghimire	2156015
	02/07/2020	02/17/2020 10:00	Pramila Ghimire	02/25/2020 21:43	Pramila Ghimire	2156016
	02/07/2020	02/17/2020 10:00	Pramila Ghimire	02/25/2020 22:22	Pramila Ghimire	2156018
	02/07/2020	02/17/2020 10:00	Pramila Ghimire	02/25/2020 23:20	Pramila Ghimire	2156020
	02/07/2020	02/17/2020 10:00	Pramila Ghimire	02/25/2020 23:59	Pramila Ghimire	2156022
	02/07/2020	02/17/2020 10:00	Pramila Ghimire	02/26/2020 00:19	Pramila Ghimire	2156023
	02/07/2020	02/17/2020 10:00	Pramila Ghimire	02/26/2020 00:38	Pramila Ghimire	2156024
	02/07/2020	02/17/2020 10:00	Pramila Ghimire	03/03/2020 06:36	Pramila Ghimire	2156017
	02/07/2020	02/17/2020 10:00	Pramila Ghimire	03/03/2020 06:56	Pramila Ghimire	2156019
	02/07/2020	02/17/2020 10:00	Pramila Ghimire	03/03/2020 07:16	Pramila Ghimire	2156021
	02/07/2020	02/17/2020 10:00	Pramila Ghimire	03/03/2020 07:35	Pramila Ghimire	2156025
	02/07/2020	02/17/2020 10:00	Pramila Ghimire	03/03/2020 07:55	Pramila Ghimire	2156026
	02/07/2020	02/18/2020 10:00	Pramila Ghimire	02/26/2020 03:15	Pramila Ghimire	2156027
	02/07/2020	02/18/2020 10:00	Pramila Ghimire	02/26/2020 03:34	Pramila Ghimire	2156028

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	02/07/2020	02/18/2020 10:00	Pramila Ghimire	02/26/2020 03:54	Pramila Ghimire	2156050
	02/07/2020	02/18/2020 10:00	Pramila Ghimire	02/26/2020 04:13	Pramila Ghimire	2156051
	02/07/2020	02/18/2020 10:00	Pramila Ghimire	02/26/2020 04:52	Pramila Ghimire	2156052
	02/07/2020	02/18/2020 10:00	Pramila Ghimire	02/26/2020 05:12	Pramila Ghimire	2156053
	02/07/2020	02/18/2020 10:00	Pramila Ghimire	03/03/2020 08:14	Pramila Ghimire	2156054
	02/07/2020	02/21/2020 09:00	Hoor Shaik	02/29/2020 04:11	Mohammad Ghaffari	2155949
	02/07/2020	02/21/2020 09:00	Hoor Shaik	02/29/2020 04:31	Mohammad Ghaffari	2155989
	02/07/2020	02/21/2020 09:00	Hoor Shaik	02/29/2020 04:50	Mohammad Ghaffari	2156029
	02/07/2020	02/21/2020 09:00	Hoor Shaik	02/29/2020 08:06	Mohammad Ghaffari	2155988

Chemical Analysis Report

SIS-2020-03-06-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

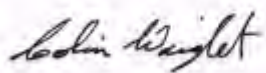
Event Description: **Palm Beach State College (Water)**
Request ID: **RQ-2020-02-24-06**
Customer: **SIS**
Project ID: **SIS-PFAS**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Road
Twin Towers Bldg. MS# 4515
Tallahassee, FL 32399
Attn: Jeff Newton

For additional information please contact
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Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 31-MAR-2020 09:24



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals, Pesticides and Priority Organic Pollutants.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: PBSC Palm Beach State College

Collection Date/Time: 03/04/2020 08:50

Field ID: DEP MW-7(3-13')

Matrix: W-GROUND

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162828	EPA 8321B	Perfluorooctanoic acid (PFOA)**	19		ng/L	P381075	
		Perfluorooctanesulfonic acid (PFOS)**	37		ng/L	P381075	
		Perfluorobutanesulfonic acid (PFBS)**	14		ng/L	P381075	
		Perfluorodecanoic acid (PFDA)**	1.0	U	ng/L	P381075	
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P381075	
		Perfluoroheptanoic acid (PFHpA)**	32		ng/L	P381075	
		Perfluorohexanesulfonic acid (PFHxS)**	64		ng/L	P381075	
		Perfluorohexanoic acid (PFHxA)**	110		ng/L	P381075	
		Perfluorononanoic acid (PFNA)**	3.8	I	ng/L	P381075	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P381075	
		Perfluorotridecanoic acid (PFTriA)**	0.40	U	ng/L	P381075	
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P381075	
		N-Me perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P381075	
		N-Et perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P381075	
		Perfluoropentanoic acid (PFPeA)**	150		ng/L	P381075	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.0	U	ng/L	P381075	
		Perfluoropentanesulfonic acid (PFPeS)**	9.2		ng/L	P381075	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	5.0	I	ng/L	P381075	MS, RPD
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	2.0	U	ng/L	P381075	
		Perfluoroheptanesulfonic acid (PFHpS)**	1.3	I	ng/L	P381075	
		Perfluorononanesulfonic acid (PFNS)**	0.40	U	ng/L	P381075	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P381075	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC Palm Beach State College

Collection Date/Time: 03/04/2020 08:50

Field ID: DEP MW-7(3-13') DUP

Matrix: W-GROUND

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162829	EPA 8321B	Perfluorooctanoic acid (PFOA)**	20		ng/L	P381075	
		Perfluorooctanesulfonic acid (PFOS)**	43		ng/L	P381075	
		Perfluorobutanesulfonic acid (PFBS)**	14		ng/L	P381075	
		Perfluorodecanoic acid (PFDA)**	1.5	I	ng/L	P381075	
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P381075	
		Perfluoroheptanoic acid (PFHpA)**	39		ng/L	P381075	
		Perfluorohexanesulfonic acid (PFHxS)**	69		ng/L	P381075	
		Perfluorohexanoic acid (PFHxA)**	130		ng/L	P381075	
		Perfluorononanoic acid (PFNA)**	4.1		ng/L	P381075	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P381075	
		Perfluorotridecanoic acid (PFTriA)**	0.40	U	ng/L	P381075	
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P381075	
		N-Me perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P381075	
		N-Et perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P381075	
		Perfluoropentanoic acid (PFPeA)**	170		ng/L	P381075	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.0	U	ng/L	P381075	
		Perfluoropentanesulfonic acid (PFPeS)**	10		ng/L	P381075	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	4.2	I	ng/L	P381075	MS, RPD
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	2.0	U	ng/L	P381075	
		Perfluoroheptanesulfonic acid (PFHpS)**	1.5	I	ng/L	P381075	
		Perfluorononanesulfonic acid (PFNS)**	0.40	U	ng/L	P381075	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P381075	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to a high concentration of parameters in the spiked sample.

Sample Location: PBSC Palm Beach State College

Collection Date/Time: 03/04/2020 09:45

Field ID: DEP MW-6(3-13')

Matrix: W-GROUND

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162830	EPA 8321B	Perfluorooctanoic acid (PFOA)**	4.7		ng/L	P380269	
		Perfluorooctanesulfonic acid (PFOS)**	6.6	I	ng/L	P380269	
		Perfluorobutanesulfonic acid (PFBS)**	2.8		ng/L	P380269	
		Perfluorodecanoic acid (PFDA)**	1.0	U	ng/L	P380269	
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P380269	
		Perfluoroheptanoic acid (PFHpA)**	4.6	I J	ng/L	P380269	RPD
		Perfluorohexanesulfonic acid (PFHxS)**	2.8		ng/L	P380269	
		Perfluorohexanoic acid (PFHxA)**	6.7	I	ng/L	P380269	
		Perfluorononanoic acid (PFNA)**	1.0	I	ng/L	P380269	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P380269	
		Perfluorotridecanoic acid (PFTriA)**	0.40	UJ	ng/L	P380269	RPD
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P380269	
		N-Me perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P380269	
		N-Et perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P380269	
		Perfluoropentanoic acid (PFPeA)**	8.9	I	ng/L	P380269	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.0	U	ng/L	P380269	
		Perfluoropentanesulfonic acid (PFPeS)**	0.42	I	ng/L	P380269	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	4.0	U	ng/L	P380269	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	2.0	U	ng/L	P380269	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.40	U	ng/L	P380269	
		Perfluorononanesulfonic acid (PFNS)**	0.40	U	ng/L	P380269	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P380269	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC Palm Beach State College

Collection Date/Time: 03/04/2020 10:30

Field ID: DEP MW-1(3-13')

Matrix: W-GROUND

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162831	EPA 8321B	Perfluorooctanoic acid (PFOA)**	920		ng/L	P380269	
		Perfluorooctanesulfonic acid (PFOS)**	210		ng/L	P380269	
		Perfluorobutanesulfonic acid (PFBS)**	6.7		ng/L	P380269	
		Perfluorodecanoic acid (PFDA)**	8.6		ng/L	P380269	
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P380269	
		Perfluoroheptanoic acid (PFHpA)**	1.7E+03	J	ng/L	P380269	RPD
		Perfluorohexanesulfonic acid (PFHxS)**	23		ng/L	P380269	
		Perfluorohexanoic acid (PFHxA)**	5.4E+03		ng/L	P380269	
		Perfluorononanoic acid (PFNA)**	230		ng/L	P380269	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P380269	
		Perfluorotridecanoic acid (PFTriA)**	0.40	UJ	ng/L	P380269	RPD
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P380269	
		N-Me perfluorooctanesulfonamidoAc acid**	0.40	U	ng/L	P380269	
		N-Et perfluorooctanesulfonamidoAc acid**	0.40	U	ng/L	P380269	
		Perfluoropentanoic acid (PFPeA)**	7.9E+03		ng/L	P380269	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.4	I	ng/L	P380269	
		Perfluoropentanesulfonic acid (PFPeS)**	3.1		ng/L	P380269	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	6.3E+03		ng/L	P380269	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	190	I	ng/L	P380269	
		Perfluoroheptanesulfonic acid (PFHpS)**	3.4		ng/L	P380269	
		Perfluorononanesulfonic acid (PFNS)**	0.40	U	ng/L	P380269	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P380269	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC Palm Beach State College

Collection Date/Time: 03/04/2020 11:15

Field ID: DEP MW-4(3-13')

Matrix: W-GROUND

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162832	EPA 8321B	Perfluorooctanoic acid (PFOA)**	6.9		ng/L	P380269	
		Perfluorooctanesulfonic acid (PFOS)**	36		ng/L	P380269	
		Perfluorobutanesulfonic acid (PFBS)**	9.1		ng/L	P380269	
		Perfluorodecanoic acid (PFDA)**	1.0	U	ng/L	P380269	
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P380269	
		Perfluoroheptanoic acid (PFHpA)**	7.6	I J	ng/L	P380269	RPD
		Perfluorohexanesulfonic acid (PFHxS)**	19		ng/L	P380269	
		Perfluorohexanoic acid (PFHxA)**	6.1	I	ng/L	P380269	
		Perfluorononanoic acid (PFNA)**	1.9	I	ng/L	P380269	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P380269	
		Perfluorotridecanoic acid (PFTriA)**	0.40	UJ	ng/L	P380269	RPD
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P380269	
		N-Me perfluorooctanesulfonamidoAc acid**	0.40	U	ng/L	P380269	
		N-Et perfluorooctanesulfonamidoAc acid**	0.40	U	ng/L	P380269	
		Perfluoropentanoic acid (PFPeA)**	7.2	I	ng/L	P380269	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.0	U	ng/L	P380269	
		Perfluoropentanesulfonic acid (PFPeS)**	1.7		ng/L	P380269	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	4.0	U	ng/L	P380269	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	2.0	U	ng/L	P380269	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.78	I	ng/L	P380269	
		Perfluorononanesulfonic acid (PFNS)**	0.40	U	ng/L	P380269	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P380269	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC Palm Beach State College

Collection Date/Time: 03/04/2020 12:30

Field ID: DEP MW-3(3-13')

Matrix: W-GROUND

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162833	EPA 8321B	Perfluorooctanoic acid (PFOA)**	22		ng/L	P380269	
		Perfluorooctanesulfonic acid (PFOS)**	200		ng/L	P380269	
		Perfluorobutanesulfonic acid (PFBS)**	26		ng/L	P380269	
		Perfluorodecanoic acid (PFDA)**	2.7	I	ng/L	P380269	
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P380269	
		Perfluoroheptanoic acid (PFHpA)**	40	J	ng/L	P380269	RPD
		Perfluorohexanesulfonic acid (PFHxS)**	96		ng/L	P380269	
		Perfluorohexanoic acid (PFHxA)**	55		ng/L	P380269	
		Perfluorononanoic acid (PFNA)**	3.3	I	ng/L	P380269	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P380269	
		Perfluorotridecanoic acid (PFTriA)**	0.40	UJ	ng/L	P380269	RPD
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P380269	
		N-Me perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P380269	
		N-Et perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P380269	
		Perfluoropentanoic acid (PFPeA)**	52		ng/L	P380269	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.0	U	ng/L	P380269	
		Perfluoropentanesulfonic acid (PFPeS)**	17		ng/L	P380269	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	200		ng/L	P380269	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	53		ng/L	P380269	
		Perfluoroheptanesulfonic acid (PFHpS)**	2.2		ng/L	P380269	
		Perfluorononanesulfonic acid (PFNS)**	0.40	U	ng/L	P380269	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P380269	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC Palm Beach State College

Collection Date/Time: 03/04/2020 13:15

Field ID: DEP MW-5(3-13')

Matrix: W-GROUND

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162834	EPA 8321B	Perfluorooctanoic acid (PFOA)**	150		ng/L	P380269	
		Perfluorooctanesulfonic acid (PFOS)**	64		ng/L	P380269	
		Perfluorobutanesulfonic acid (PFBS)**	22		ng/L	P380269	
		Perfluorodecanoic acid (PFDA)**	1.1	I	ng/L	P380269	
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P380269	
		Perfluoroheptanoic acid (PFHpA)**	850	J	ng/L	P380269	RPD
		Perfluorohexanesulfonic acid (PFHxS)**	240		ng/L	P380269	
		Perfluorohexanoic acid (PFHxA)**	1.7E+03		ng/L	P380269	
		Perfluorononanoic acid (PFNA)**	21		ng/L	P380269	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P380269	
		Perfluorotridecanoic acid (PFTriA)**	0.40	UJ	ng/L	P380269	RPD
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P380269	
		N-Me perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P380269	
		N-Et perfluorooctanesulfonamidoAcid**	0.42	I	ng/L	P380269	
		Perfluoropentanoic acid (PFPeA)**	2.0E+03		ng/L	P380269	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.0	U	ng/L	P380269	
		Perfluoropentanesulfonic acid (PFPeS)**	20		ng/L	P380269	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	170		ng/L	P380269	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	100		ng/L	P380269	
		Perfluoroheptanesulfonic acid (PFHpS)**	3.3		ng/L	P380269	
		Perfluorononanesulfonic acid (PFNS)**	0.40	U	ng/L	P380269	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P380269	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC Palm Beach State College

Collection Date/Time: 03/04/2020 13:30

Field ID: DEP MW-9(85-105')

Matrix: W-GROUND

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162835	EPA 8321B	Perfluorooctanoic acid (PFOA)**	1.8	I	ng/L	P380269	
		Perfluorooctanesulfonic acid (PFOS)**	2.0	U	ng/L	P380269	
		Perfluorobutanesulfonic acid (PFBS)**	0.57	I	ng/L	P380269	
		Perfluorodecanoic acid (PFDA)**	1.3	I	ng/L	P380269	
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P380269	
		Perfluoroheptanoic acid (PFHpA)**	2.0	UJ	ng/L	P380269	RPD
		Perfluorohexanesulfonic acid (PFHxS)**	0.40	U	ng/L	P380269	
		Perfluorohexanoic acid (PFHxA)**	2.0	U	ng/L	P380269	
		Perfluorononanoic acid (PFNA)**	1.5	I	ng/L	P380269	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P380269	
		Perfluorotridecanoic acid (PFTriA)**	0.40	UJ	ng/L	P380269	RPD
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P380269	
		N-Me perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P380269	
		N-Et perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P380269	
		Perfluoropentanoic acid (PFPeA)**	4.0	U	ng/L	P380269	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.0	U	ng/L	P380269	
		Perfluoropentanesulfonic acid (PFPeS)**	0.40	U	ng/L	P380269	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	4.0	U	ng/L	P380269	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	2.3	I	ng/L	P380269	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.40	U	ng/L	P380269	
		Perfluorononanesulfonic acid (PFNS)**	0.40	U	ng/L	P380269	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P380269	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC Palm Beach State College

Collection Date/Time: 03/04/2020 11:45

Field ID: DEP MW-12(45-65')

Matrix: W-GROUND

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162836	EPA 8321B	Perfluorooctanoic acid (PFOA)**	7.1		ng/L	P380269	
		Perfluorooctanesulfonic acid (PFOS)**	13		ng/L	P380269	
		Perfluorobutanesulfonic acid (PFBS)**	2.8		ng/L	P380269	
		Perfluorodecanoic acid (PFDA)**	1.0	U	ng/L	P380269	
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P380269	
		Perfluoroheptanoic acid (PFHpA)**	3.5	I J	ng/L	P380269	RPD
		Perfluorohexanesulfonic acid (PFHxS)**	1.6		ng/L	P380269	
		Perfluorohexanoic acid (PFHxA)**	4.7	I	ng/L	P380269	
		Perfluorononanoic acid (PFNA)**	1.0	U	ng/L	P380269	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P380269	
		Perfluorotridecanoic acid (PFTriA)**	0.40	UJ	ng/L	P380269	RPD
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P380269	
		N-Me perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P380269	
		N-Et perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P380269	
		Perfluoropentanoic acid (PFPeA)**	9.8	I	ng/L	P380269	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.0	U	ng/L	P380269	
		Perfluoropentanesulfonic acid (PFPeS)**	0.40	U	ng/L	P380269	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	4.0	U	ng/L	P380269	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	2.0	U	ng/L	P380269	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.40	U	ng/L	P380269	
		Perfluorononanesulfonic acid (PFNS)**	0.40	U	ng/L	P380269	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P380269	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC Palm Beach State College

Collection Date/Time: 03/04/2020 14:15

Field ID: DEP MW-2(3-13')

Matrix: W-GROUND

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162837	EPA 8321B	Perfluorooctanoic acid (PFOA)**	21		ng/L	P380269	
		Perfluorooctanesulfonic acid (PFOS)**	570		ng/L	P380269	
		Perfluorobutanesulfonic acid (PFBS)**	15		ng/L	P380269	
		Perfluorodecanoic acid (PFDA)**	1.9	I	ng/L	P380269	
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P380269	
		Perfluoroheptanoic acid (PFHpA)**	37	J	ng/L	P380269	RPD
		Perfluorohexanesulfonic acid (PFHxS)**	89		ng/L	P380269	
		Perfluorohexanoic acid (PFHxA)**	81		ng/L	P380269	
		Perfluorononanoic acid (PFNA)**	15		ng/L	P380269	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P380269	
		Perfluorotridecanoic acid (PFTriA)**	0.40	UJ	ng/L	P380269	RPD
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P380269	
		N-Me perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P380269	
		N-Et perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P380269	
		Perfluoropentanoic acid (PFPeA)**	110		ng/L	P380269	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.0	U	ng/L	P380269	
		Perfluoropentanesulfonic acid (PFPeS)**	9.3		ng/L	P380269	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	54		ng/L	P380269	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	37		ng/L	P380269	
		Perfluoroheptanesulfonic acid (PFHpS)**	1.7		ng/L	P380269	
		Perfluorononanesulfonic acid (PFNS)**	0.53	I	ng/L	P380269	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P380269	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC Palm Beach State College

Collection Date/Time: 03/04/2020 15:00

Field ID: DEP MW-8(3-13')

Matrix: W-GROUND

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162838	EPA 8321B	Perfluorooctanoic acid (PFOA)**	5.1		ng/L	P380269	
		Perfluorooctanesulfonic acid (PFOS)**	35		ng/L	P380269	
		Perfluorobutanesulfonic acid (PFBS)**	2.6		ng/L	P380269	
		Perfluorodecanoic acid (PFDA)**	1.0	U	ng/L	P380269	
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P380269	
		Perfluoroheptanoic acid (PFHpA)**	3.3	I J	ng/L	P380269	RPD
		Perfluorohexanesulfonic acid (PFHxS)**	1.3	I	ng/L	P380269	
		Perfluorohexanoic acid (PFHxA)**	3.0	I	ng/L	P380269	
		Perfluorononanoic acid (PFNA)**	1.8	I	ng/L	P380269	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P380269	
		Perfluorotridecanoic acid (PFTriA)**	0.40	UJ	ng/L	P380269	RPD
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P380269	
		N-Me perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P380269	
		N-Et perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P380269	
		Perfluoropentanoic acid (PFPeA)**	4.9	I	ng/L	P380269	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.0	U	ng/L	P380269	
		Perfluoropentanesulfonic acid (PFPeS)**	0.40	U	ng/L	P380269	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	4.0	U	ng/L	P380269	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	2.0	U	ng/L	P380269	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.40	U	ng/L	P380269	
		Perfluorononanesulfonic acid (PFNS)**	0.40	U	ng/L	P380269	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P380269	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC Palm Beach State College

Collection Date/Time: 03/04/2020 14:25

Field ID: DEP MW-13(45-65')

Matrix: W-GROUND

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162839	EPA 8321B	Perfluorooctanoic acid (PFOA)**	11		ng/L	P380269	
		Perfluorooctanesulfonic acid (PFOS)**	11		ng/L	P380269	
		Perfluorobutanesulfonic acid (PFBS)**	14		ng/L	P380269	
		Perfluorodecanoic acid (PFDA)**	1.0	U	ng/L	P380269	
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P380269	
		Perfluoroheptanoic acid (PFHpA)**	18	J	ng/L	P380269	RPD
		Perfluorohexanesulfonic acid (PFHxS)**	9.8		ng/L	P380269	
		Perfluorohexanoic acid (PFHxA)**	9.7		ng/L	P380269	
		Perfluorononanoic acid (PFNA)**	1.0	I	ng/L	P380269	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P380269	
		Perfluorotridecanoic acid (PFTriA)**	0.40	UJ	ng/L	P380269	RPD
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P380269	
		N-Me perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P380269	
		N-Et perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P380269	
		Perfluoropentanoic acid (PFPeA)**	11	I	ng/L	P380269	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.0	U	ng/L	P380269	
		Perfluoropentanesulfonic acid (PFPeS)**	1.5	I	ng/L	P380269	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	4.0	U	ng/L	P380269	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	2.0	U	ng/L	P380269	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.40	U	ng/L	P380269	
		Perfluorononanesulfonic acid (PFNS)**	0.40	U	ng/L	P380269	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P380269	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC Palm Beach State College

Collection Date/Time: 03/04/2020 14:30

Field ID: DEP MW-13(45-65') DUP

Matrix: W-GROUND

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162840	EPA 8321B	Perfluorooctanoic acid (PFOA)**	12		ng/L	P380269	
		Perfluorooctanesulfonic acid (PFOS)**	10		ng/L	P380269	
		Perfluorobutanesulfonic acid (PFBS)**	13		ng/L	P380269	
		Perfluorodecanoic acid (PFDA)**	1.0	U	ng/L	P380269	
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P380269	
		Perfluoroheptanoic acid (PFHpA)**	16	J	ng/L	P380269	RPD
		Perfluorohexanesulfonic acid (PFHxS)**	9.7		ng/L	P380269	
		Perfluorohexanoic acid (PFHxA)**	9.5		ng/L	P380269	
		Perfluorononanoic acid (PFNA)**	1.2	I	ng/L	P380269	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P380269	
		Perfluorotridecanoic acid (PFTriA)**	0.40	UJ	ng/L	P380269	RPD
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P380269	
		N-Me perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P380269	
		N-Et perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P380269	
		Perfluoropentanoic acid (PFPeA)**	12	I	ng/L	P380269	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.0	U	ng/L	P380269	
		Perfluoropentanesulfonic acid (PFPeS)**	1.4	I	ng/L	P380269	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	4.0	U	ng/L	P380269	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	2.0	U	ng/L	P380269	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.40	U	ng/L	P380269	
		Perfluorononanesulfonic acid (PFNS)**	0.40	U	ng/L	P380269	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P380269	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC Palm Beach State College

Collection Date/Time: 03/04/2020 15:40

Field ID: IDW 3-4-20

Matrix: W-GROUND

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162825	EPA 8270E	Acenaphthene	0.027	U	ug/L	P380263	
		Acenaphthylene	0.027	U	ug/L	P380263	
		Acetophenone	0.46	I	ug/L	P380263	
		2-Acetylaminofluorene	1.1	U	ug/L	P380263	
		4-Aminobiphenyl	4.3	U	ug/L	P380263	
		Aniline	1.1	U	ug/L	P380263	
		Anthracene	0.053	U	ug/L	P380263	
		Azobenzene/1,2-Diphenylhydrazine**	0.053	U	ug/L	P380263	
		Benzidine	11	U	ug/L	P380263	
		Benzo(a)anthracene	0.027	U	ug/L	P380263	
		Benzo(a)pyrene	0.027	U	ug/L	P380263	
		Benzo(b)fluoranthene	0.027	U	ug/L	P380263	
		Benzo(k)fluoranthene	0.027	U	ug/L	P380263	
		Benzo(g,h,i)perylene	0.027	U	ug/L	P380263	
		Benzyl alcohol	0.11	U	ug/L	P380263	
		Bis(2-chloroethoxy)methane	0.053	U	ug/L	P380263	
		Bis(2-chloroethyl)ether	0.053	U	ug/L	P380263	
		Bis(2-chloroisopropyl)ether	0.053	U	ug/L	P380263	
		Bis(2-ethylhexyl)phthalate	5.3	U	ug/L	P380263	
		Butyl benzyl phthalate	1.1	U	ug/L	P380263	
		4-Bromophenyl phenyl ether	0.053	U	ug/L	P380263	
		2-Chloronaphthalene	0.053	U	ug/L	P380263	
		4-Chlorophenyl phenyl ether	0.053	U	ug/L	P380263	
		Carbazole	0.053	U	ug/L	P380263	
		Chrysene	0.027	U	ug/L	P380263	
		m,p-Cresols	0.053	U	ug/L	P380263	
		o-Cresol	0.053	U	ug/L	P380263	
		Di-n-butyl phthalate	2.1	U	ug/L	P380263	
		Di-n-octyl phthalate	0.053	U	ug/L	P380263	
		Dibenzo(a,h)anthracene	0.027	U	ug/L	P380263	
		Dibenzofuran	0.053	U	ug/L	P380263	
		3,3'-Dichlorobenzidine	11	U	ug/L	P380263	
		Diethyl phthalate	2.1	U	ug/L	P380263	
		Dimethyl phthalate	0.053	U	ug/L	P380263	
		Dimethylaminoazobenzene	0.053	U	ug/L	P380263	
		7,12-Dimethylbenz(a)anthracene	0.11	U	ug/L	P380263	
		1,3-Dinitrobenzene	0.11	U	ug/L	P380263	
		2,4-Dinitrotoluene	0.053	U	ug/L	P380263	
		2,6-Dinitrotoluene	0.053	U	ug/L	P380263	
		Dinoseb**	4.3	U	ug/L	P380263	
		Ethyl methanesulfonate	1.1	U	ug/L	P380263	
		Fluoranthene	0.053	U	ug/L	P380263	
		Fluorene	0.027	U	ug/L	P380263	
		Hexachlorobenzene	0.053	U	ug/L	P380263	

Field ID: IDW 3-4-20

Matrix: W-GROUND

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162825	EPA 8270E	Hexachlorobutadiene	0.053	U	ug/L	P380263	
		Hexachlorocyclopentadiene	0.053	U	ug/L	P380263	
		Hexachloroethane	0.053	U	ug/L	P380263	
		Hexachloropropene	0.053	U	ug/L	P380263	
		Indeno(1,2,3-cd)pyrene	0.027	U	ug/L	P380263	
		Isophorone	0.053	U	ug/L	P380263	
		Isosafrole	0.053	U	ug/L	P380263	
		3-Methylcholanthrene	0.11	U	ug/L	P380263	
		2-Methylnaphthalene	0.11	U	ug/L	P380263	
		Naphthalene	0.11	U	ug/L	P380263	MS
		1-Naphthylamine	11	U	ug/L	P380263	
		2-Naphthylamine	11	U	ug/L	P380263	MS
		2-Nitroaniline	0.053	U	ug/L	P380263	
		Nitrobenzene	0.053	U	ug/L	P380263	
		5-Nitro-o-toluidine	0.11	U	ug/L	P380263	
		N-Nitrosodi-n-butylamine	0.053	U	ug/L	P380263	
		N-Nitrosodiethylamine	1.1	U	ug/L	P380263	
		N-Nitrosodimethylamine	2.1	U	ug/L	P380263	
		N-Nitrosodi-n-propylamine	0.053	U	ug/L	P380263	
		N-Nitrosomethylethylamine	2.1	U	ug/L	P380263	
		N-Nitrosomorpholine	0.053	U	ug/L	P380263	
		N-Nitrosopiperidine	0.053	U	ug/L	P380263	
		N-Nitrosopyrrolidine	0.053	U	ug/L	P380263	
		Pentachlorobenzene	0.053	U	ug/L	P380263	
		Pentachloroethane**	0.053	U	ug/L	P380263	
		Pentachloronitrobenzene	0.053	U	ug/L	P380263	MS
		Phenacetin	0.11	U	ug/L	P380263	
		Phenanthrene	0.11	U	ug/L	P380263	
		2-Picoline	1.1	U	ug/L	P380263	
		Pyrene	0.11	U	ug/L	P380263	
		Pyridine	4.3	U	ug/L	P380263	
		Safrole	0.053	U	ug/L	P380263	
		1,2,4,5-Tetrachlorobenzene	0.053	U	ug/L	P380263	
		o-Toluidine	0.11	U	ug/L	P380263	
		1,2,4-Trichlorobenzene	0.053	U	ug/L	P380263	
		1,3,5-Trinitrobenzene	0.11	U	ug/L	P380263	
		4-Chloro-3-methylphenol	0.053	U	ug/L	P380263	
		2-Chlorophenol	0.053	U	ug/L	P380263	
		2,4-Dichlorophenol	0.053	U	ug/L	P380263	
		2,6-Dichlorophenol	0.053	U	ug/L	P380263	
		2,4-Dimethylphenol	0.053	U	ug/L	P380263	
		2,4-Dinitrophenol	11	U	ug/L	P380263	
		2-Methyl-4,6-dinitrophenol	3.2	U	ug/L	P380263	
		2-Nitrophenol	0.053	U	ug/L	P380263	
		4-Nitrophenol	11	U	ug/L	P380263	

Field ID: IDW 3-4-20

Matrix: W-GROUND

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162825	EPA 8270E	Pentachlorophenol	0.53	U	ug/L	P380263	
		Phenol	0.053	U	ug/L	P380263	
		2,3,4,6-Tetrachlorophenol	0.11	U	ug/L	P380263	
		2,4,5-Trichlorophenol	0.053	U	ug/L	P380263	
		2,4,6-Trichlorophenol	0.053	U	ug/L	P380263	
		1-Methylnaphthalene	0.11	U	ug/L	P380263	
		N-Nitrosodiphenylamine/ Diphenylamine	0.11	U	ug/L	P380263	
2162826	EPA 7473	Mercury**	0.10	U	ug/L	P380964	
2162827	EPA 6020A	Arsenic	1.56		ug/L	P380369	
		Barium	28.4		ug/L	P380369	
		Cadmium	0.027	I	ug/L	P380369	
		Chromium	2.1		ug/L	P380369	
		Lead	0.76		ug/L	P380369	
		Selenium	1.29		ug/L	P380369	
		Silver	0.010	U	ug/L	P380369	
2162844	EPA 8321B	Perfluorooctanoic acid (PFOA)**	86		ng/L	P380269	
		Perfluorooctanesulfonic acid (PFOS)**	35		ng/L	P380269	
		Perfluorobutanesulfonic acid (PFBS)**	6.3		ng/L	P380269	
		Perfluorodecanoic acid (PFDA)**	1.7	I	ng/L	P380269	
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P380269	
		Perfluoroheptanoic acid (PFHpA)**	110	J	ng/L	P380269	RPD
		Perfluorohexanesulfonic acid (PFHxS)**	27		ng/L	P380269	
		Perfluorohexanoic acid (PFHxA)**	450		ng/L	P380269	
		Perfluorononanoic acid (PFNA)**	18		ng/L	P380269	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P380269	
		Perfluorotridecanoic acid (PFTriA)**	0.40	UJ	ng/L	P380269	RPD
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P380269	
		N-Me perfluorooctanesulfonamidoAc acid**	0.40	U	ng/L	P380269	
		N-Et perfluorooctanesulfonamidoAc acid**	0.40	U	ng/L	P380269	
		Perfluoropentanoic acid (PFPeA)**	600		ng/L	P380269	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.0	U	ng/L	P380269	
		Perfluoropentanesulfonic acid (PFPeS)**	3.6		ng/L	P380269	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	380		ng/L	P380269	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	38		ng/L	P380269	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.68	I	ng/L	P380269	
		Perfluorononanesulfonic acid (PFNS)**	0.40	U	ng/L	P380269	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P380269	
2162845	EPA 8260D	Benzene	0.20	U	ug/L	P380474	
		Bromodichloromethane	0.66	I	ug/L	P380474	
		Bromoform	0.50	U	ug/L	P380474	
		Bromomethane	0.50	U	ug/L	P380474	
		2-Butanone	3.0	U	ug/L	P380474	

Field ID: IDW 3-4-20

Matrix: W-GROUND

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162845	EPA 8260D	Carbon tetrachloride	0.20	U	ug/L	P380474	
		Chlorobenzene	0.20	U	ug/L	P380474	
		Chloroethane	0.50	U	ug/L	P380474	
		Chloroform	5.4		ug/L	P380474	
		Chloromethane	0.50	UJ	ug/L	P380474	CCV
		Dibromochloromethane	0.21	I	ug/L	P380474	
		1,2-Dichlorobenzene	0.50	U	ug/L	P380474	
		1,3-Dichlorobenzene	0.50	U	ug/L	P380474	
		1,4-Dichlorobenzene	0.50	U	ug/L	P380474	
		1,1-Dichloroethane	0.20	U	ug/L	P380474	
		1,2-Dichloroethane	0.20	U	ug/L	P380474	
		1,1-Dichloroethene	0.20	U	ug/L	P380474	
		cis-1,2-Dichloroethene	0.20	U	ug/L	P380474	
		trans-1,2-Dichloroethene	0.20	U	ug/L	P380474	
		1,2-Dichloropropane	0.20	U	ug/L	P380474	
		cis-1,3-Dichloropropene	0.50	U	ug/L	P380474	
		trans-1,3-Dichloropropene	0.50	U	ug/L	P380474	
		Ethylbenzene	0.20	U	ug/L	P380474	
		Methyl-t-butyl ether	0.20	U	ug/L	P380474	
		Methylene chloride	1.0	U	ug/L	P380474	
		1,1,2,2-Tetrachloroethane	0.20	U	ug/L	P380474	
		Tetrachloroethene	0.20	U	ug/L	P380474	
		Toluene	0.50	U	ug/L	P380474	
		1,1,1-Trichloroethane	0.20	U	ug/L	P380474	
		1,1,2-Trichloroethane	0.20	U	ug/L	P380474	
		Trichloroethene	0.20	U	ug/L	P380474	
		Trichlorofluoromethane	0.20	U	ug/L	P380474	
		Vinyl chloride	0.20	U	ug/L	P380474	
		o-Xylene	0.50	U	ug/L	P380474	
		m,p-Xylene	0.50	U	ug/L	P380474	

Ref. Method and Comment:

EPA 8270E: Precision for benzidine is not available due to no recoveries in the matrix spikes.

EPA 6020A: Batch matrix spike recoveries for barium are unavailable because of high analyte concentration in the QC sample.

EPA 8321B: Insufficient sample to perform matrix spikes. Refer to the Lab Analysis Report for an explanation of QC Codes.

EPA 8260D: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC Palm Beach State College

Collection Date/Time: 03/04/2020 15:40

Field ID: Trip Blank

Matrix: W-TRIP-BLK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162846	EPA 8260D	Benzene	0.20	U	ug/L	P380474	
		Bromodichloromethane	0.20	U	ug/L	P380474	
		Bromoform	0.50	U	ug/L	P380474	
		Bromomethane	0.50	U	ug/L	P380474	
		2-Butanone	3.0	U	ug/L	P380474	
		Carbon tetrachloride	0.20	U	ug/L	P380474	
		Chlorobenzene	0.20	U	ug/L	P380474	
		Chloroethane	0.50	U	ug/L	P380474	
		Chloroform	0.20	U	ug/L	P380474	
		Chloromethane	0.50	UJ	ug/L	P380474	CCV
		Dibromochloromethane	0.20	U	ug/L	P380474	
		1,2-Dichlorobenzene	0.50	U	ug/L	P380474	
		1,3-Dichlorobenzene	0.50	U	ug/L	P380474	
		1,4-Dichlorobenzene	0.50	U	ug/L	P380474	
		1,1-Dichloroethane	0.20	U	ug/L	P380474	
		1,2-Dichloroethane	0.20	U	ug/L	P380474	
		1,1-Dichloroethene	0.20	U	ug/L	P380474	
		cis-1,2-Dichloroethene	0.20	U	ug/L	P380474	
		trans-1,2-Dichloroethene	0.20	U	ug/L	P380474	
		1,2-Dichloropropane	0.20	U	ug/L	P380474	
		cis-1,3-Dichloropropene	0.50	U	ug/L	P380474	
		trans-1,3-Dichloropropene	0.50	U	ug/L	P380474	
		Ethylbenzene	0.20	U	ug/L	P380474	
		Methyl-t-butyl ether	0.20	U	ug/L	P380474	
		Methylene chloride	1.0	U	ug/L	P380474	
		1,1,2,2-Tetrachloroethane	0.20	U	ug/L	P380474	
		Tetrachloroethene	0.20	U	ug/L	P380474	
		Toluene	0.50	U	ug/L	P380474	
		1,1,1-Trichloroethane	0.20	U	ug/L	P380474	
		1,1,2-Trichloroethane	0.20	U	ug/L	P380474	
		Trichloroethene	0.20	U	ug/L	P380474	
		Trichlorofluoromethane	0.20	U	ug/L	P380474	
		Vinyl chloride	0.20	U	ug/L	P380474	
		o-Xylene	0.50	U	ug/L	P380474	
		m,p-Xylene	0.50	U	ug/L	P380474	

Ref. Method and Comment:

EPA 8260D: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC Palm Beach State College

Collection Date/Time: 03/04/2020 15:30

Field ID: DEP MW-10(87-107')

Matrix: W-GROUND

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162841	EPA 8321B	Perfluorooctanoic acid (PFOA)**	1.0	U	ng/L	P380269	
		Perfluorooctanesulfonic acid (PFOS)**	2.0	U	ng/L	P380269	
		Perfluorobutanesulfonic acid (PFBS)**	0.88	I	ng/L	P380269	
		Perfluorodecanoic acid (PFDA)**	1.0	U	ng/L	P380269	
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P380269	
		Perfluoroheptanoic acid (PFHpA)**	2.0	UJ	ng/L	P380269	RPD
		Perfluorohexanesulfonic acid (PFHxS)**	0.40	U	ng/L	P380269	
		Perfluorohexanoic acid (PFHxA)**	2.0	U	ng/L	P380269	
		Perfluorononanoic acid (PFNA)**	1.0	U	ng/L	P380269	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P380269	
		Perfluorotridecanoic acid (PFTriA)**	0.40	UJ	ng/L	P380269	RPD
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P380269	
		N-Me perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P380269	
		N-Et perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P380269	
		Perfluoropentanoic acid (PFPeA)**	4.0	U	ng/L	P380269	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.0	U	ng/L	P380269	
		Perfluoropentanesulfonic acid (PFPeS)**	0.40	U	ng/L	P380269	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	8.0	I	ng/L	P380269	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	2.0	U	ng/L	P380269	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.40	U	ng/L	P380269	
		Perfluorononanesulfonic acid (PFNS)**	0.40	U	ng/L	P380269	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P380269	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC Palm Beach State College

Collection Date/Time: 03/04/2020 16:26

Field ID: DEP MW-11(45-65')

Matrix: W-GROUND

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162842	EPA 8321B	Perfluorooctanoic acid (PFOA)**	19		ng/L	P380269	
		Perfluorooctanesulfonic acid (PFOS)**	310		ng/L	P380269	
		Perfluorobutanesulfonic acid (PFBS)**	15		ng/L	P380269	
		Perfluorodecanoic acid (PFDA)**	2.8	I	ng/L	P380269	
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P380269	
		Perfluoroheptanoic acid (PFHpA)**	46	J	ng/L	P380269	RPD
		Perfluorohexanesulfonic acid (PFHxS)**	160		ng/L	P380269	
		Perfluorohexanoic acid (PFHxA)**	80		ng/L	P380269	
		Perfluorononanoic acid (PFNA)**	4.6		ng/L	P380269	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P380269	
		Perfluorotridecanoic acid (PFTriA)**	0.40	UJ	ng/L	P380269	RPD
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P380269	
		N-Me perfluorooctanesulfonamidoAc acid**	0.40	U	ng/L	P380269	
		N-Et perfluorooctanesulfonamidoAc acid**	0.40	U	ng/L	P380269	
		Perfluoropentanoic acid (PFPeA)**	84		ng/L	P380269	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.0	U	ng/L	P380269	
		Perfluoropentanesulfonic acid (PFPeS)**	26		ng/L	P380269	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	190		ng/L	P380269	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	23		ng/L	P380269	
		Perfluoroheptanesulfonic acid (PFHpS)**	6.9		ng/L	P380269	
		Perfluorononanesulfonic acid (PFNS)**	0.40	U	ng/L	P380269	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P380269	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PBSC Palm Beach State College

Collection Date/Time: 03/04/2020 16:30

Field ID: FRB 3-4-20

Matrix: W-FRB

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162843	EPA 8321B	Perfluorooctanoic acid (PFOA)**	1.0	U	ng/L	P380269	
		Perfluorooctanesulfonic acid (PFOS)**	2.0	U	ng/L	P380269	
		Perfluorobutanesulfonic acid (PFBS)**	0.40	U	ng/L	P380269	
		Perfluorodecanoic acid (PFDA)**	1.0	U	ng/L	P380269	
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P380269	
		Perfluoroheptanoic acid (PFHpA)**	2.0	UJ	ng/L	P380269	RPD
		Perfluorohexanesulfonic acid (PFHxS)**	0.40	U	ng/L	P380269	
		Perfluorohexanoic acid (PFHxA)**	2.0	U	ng/L	P380269	
		Perfluorononanoic acid (PFNA)**	1.0	U	ng/L	P380269	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P380269	
		Perfluorotridecanoic acid (PFTriA)**	0.40	UJ	ng/L	P380269	RPD
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P380269	
		N-Me perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P380269	
		N-Et perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P380269	
		Perfluoropentanoic acid (PFPeA)**	4.0	U	ng/L	P380269	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.0	U	ng/L	P380269	
		Perfluoropentanesulfonic acid (PFPeS)**	0.40	U	ng/L	P380269	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	4.0	U	ng/L	P380269	
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	2.0	U	ng/L	P380269	
		Perfluoroheptanesulfonic acid (PFHpS)**	0.40	U	ng/L	P380269	
		Perfluorononanesulfonic acid (PFNS)**	0.40	U	ng/L	P380269	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P380269	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes. Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 6020A
Batch ID: P380369

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Lead	0.20	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 7473
Batch ID: P380964

Component	Result	Code	Units
Mercury	0.10	U	ug/L

Reference Method: EPA 8260D
Batch ID: P380474

Component	Result	Code	Units
1,1-Dichloroethane	0.20	U	ug/L
1,1-Dichloroethene	0.20	U	ug/L
1,1,1-Trichloroethane	0.20	U	ug/L
1,1,2-Trichloroethane	0.20	U	ug/L
1,1,2,2-Tetrachloroethane	0.20	U	ug/L
1,2-Dichlorobenzene	0.50	U	ug/L
1,2-Dichloroethane	0.20	U	ug/L
1,2-Dichloropropane	0.20	U	ug/L
1,3-Dichlorobenzene	0.50	U	ug/L
1,4-Dichlorobenzene	0.50	U	ug/L
2-Butanone	3.0	U	ug/L
Benzene	0.20	U	ug/L
Bromodichloromethane	0.20	U	ug/L
Bromoform	0.50	U	ug/L
Bromomethane	0.50	U	ug/L
Carbon tetrachloride	0.20	U	ug/L
Chlorobenzene	0.20	U	ug/L
Chloroethane	0.50	U	ug/L
Chloroform	0.20	U	ug/L
Chloromethane	0.50	U	ug/L
cis-1,2-Dichloroethene	0.20	U	ug/L
cis-1,3-Dichloropropene	0.50	U	ug/L
Dibromochloromethane	0.20	U	ug/L
Ethylbenzene	0.20	U	ug/L
m,p-Xylene	0.50	U	ug/L
Methyl-t-butyl ether	0.20	U	ug/L
Methylene chloride	1.0	U	ug/L
o-Xylene	0.50	U	ug/L
Tetrachloroethene	0.20	U	ug/L
Toluene	0.50	U	ug/L
trans-1,2-Dichloroethene	0.20	U	ug/L
trans-1,3-Dichloropropene	0.50	U	ug/L
Trichloroethene	0.20	U	ug/L
Trichlorofluoromethane	0.20	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8260D
Batch ID: P380474

Component	Result	Code	Units
Vinyl chloride	0.20	U	ug/L

Reference Method: EPA 8270E
Batch ID: P380263

Component	Result	Code	Units
1-Methylnaphthalene	0.10	U	ug/L
1-Naphthylamine	10	U	ug/L
1,2,4-Trichlorobenzene	0.050	U	ug/L
1,2,4,5-Tetrachlorobenzene	0.050	U	ug/L
1,3-Dinitrobenzene	0.10	U	ug/L
1,3,5-Trinitrobenzene	0.10	U	ug/L
2-Acetylaminofluorene	1.0	U	ug/L
2-Chloronaphthalene	0.050	U	ug/L
2-Chlorophenol	0.050	U	ug/L
2-Methyl-4,6-dinitrophenol	3.0	U	ug/L
2-Methylnaphthalene	0.10	U	ug/L
2-Naphthylamine	10	U	ug/L
2-Nitroaniline	0.050	U	ug/L
2-Nitrophenol	0.050	U	ug/L
2-Picoline	1.0	U	ug/L
2,3,4,6-Tetrachlorophenol	0.10	U	ug/L
2,4-Dichlorophenol	0.050	U	ug/L
2,4-Dimethylphenol	0.050	U	ug/L
2,4-Dinitrophenol	10	U	ug/L
2,4-Dinitrotoluene	0.050	U	ug/L
2,4,5-Trichlorophenol	0.050	U	ug/L
2,4,6-Trichlorophenol	0.050	U	ug/L
2,6-Dichlorophenol	0.050	U	ug/L
2,6-Dinitrotoluene	0.050	U	ug/L
3-Methylcholanthrene	0.10	U	ug/L
3,3'-Dichlorobenzidine	10	U	ug/L
4-Aminobiphenyl	4.0	U	ug/L
4-Bromophenyl phenyl ether	0.050	U	ug/L
4-Chloro-3-methylphenol	0.050	U	ug/L
4-Chlorophenyl phenyl ether	0.050	U	ug/L
4-Nitrophenol	10	U	ug/L
5-Nitro-o-toluidine	0.10	U	ug/L
7,12-Dimethylbenz(a)anthracene	0.10	U	ug/L
Acenaphthene	0.025	U	ug/L
Acenaphthylene	0.025	U	ug/L
Acetophenone	0.20	U	ug/L
Aniline	1.0	U	ug/L
Anthracene	0.050	U	ug/L
Azobenzene/1,2-Diphenylhydrazine	0.050	U	ug/L
Benzidine	10	U	ug/L
Benzo(a)anthracene	0.025	U	ug/L
Benzo(a)pyrene	0.025	U	ug/L
Benzo(b)fluoranthene	0.025	U	ug/L
Benzo(g,h,i)perylene	0.025	U	ug/L
Benzo(k)fluoranthene	0.025	U	ug/L
Benzyl alcohol	0.10	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270E
 Batch ID: P380263

Component	Result	Code	Units
Bis(2-chloroethoxy)methane	0.050	U	ug/L
Bis(2-chloroethyl)ether	0.050	U	ug/L
Bis(2-chloroisopropyl)ether	0.050	U	ug/L
Bis(2-ethylhexyl)phthalate	5.0	U	ug/L
Butyl benzyl phthalate	1.0	U	ug/L
Carbazole	0.050	U	ug/L
Chrysene	0.025	U	ug/L
Di-n-butyl phthalate	2.0	U	ug/L
Di-n-octyl phthalate	0.050	U	ug/L
Dibenzo(a,h)anthracene	0.025	U	ug/L
Dibenzofuran	0.050	U	ug/L
Diethyl phthalate	2.0	U	ug/L
Dimethyl phthalate	0.050	U	ug/L
Dimethylaminoazobenzene	0.050	U	ug/L
Dinoseb	4.0	U	ug/L
Ethyl methanesulfonate	1.0	U	ug/L
Fluoranthene	0.050	U	ug/L
Fluorene	0.025	U	ug/L
Hexachlorobenzene	0.050	U	ug/L
Hexachlorobutadiene	0.050	U	ug/L
Hexachlorocyclopentadiene	0.050	U	ug/L
Hexachloroethane	0.050	U	ug/L
Hexachloropropene	0.050	U	ug/L
Indeno(1,2,3-cd)pyrene	0.025	U	ug/L
Isophorone	0.050	U	ug/L
Isosafrole	0.050	U	ug/L
m,p-Cresols	0.050	U	ug/L
N-Nitrosodi-n-butylamine	0.050	U	ug/L
N-Nitrosodi-n-propylamine	0.050	U	ug/L
N-Nitrosodiethylamine	1.0	U	ug/L
N-Nitrosodimethylamine	2.0	U	ug/L
N-Nitrosodiphenylamine/ Diphenylamine	0.10	U	ug/L
N-Nitrosomethylethylamine	2.0	U	ug/L
N-Nitrosomorpholine	0.050	U	ug/L
N-Nitrosopiperidine	0.050	U	ug/L
N-Nitrosopyrrolidine	0.050	U	ug/L
Naphthalene	0.10	U	ug/L
Nitrobenzene	0.050	U	ug/L
o-Cresol	0.050	U	ug/L
o-Toluidine	0.10	U	ug/L
Pentachlorobenzene	0.050	U	ug/L
Pentachloroethane	0.050	U	ug/L
Pentachloronitrobenzene	0.050	U	ug/L
Pentachlorophenol	0.50	U	ug/L
Phenacetin	0.10	U	ug/L
Phenanthrene	0.10	U	ug/L
Phenol	0.050	U	ug/L
Pyrene	0.10	U	ug/L
Pyridine	4.0	U	ug/L
Safrole	0.050	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P380269

Component	Result	Code	Units
4:2 Fluorotelomer sulfonate (4:2 FTS)	2.0	U	ng/L
6:2 Fluorotelomer sulfonate (6:2 FTS)	4.0	U	ng/L
8:2 Fluorotelomer sulfonate (8:2 FTS)	2.0	U	ng/L
N-Et perfluorooctanesulfonamidoAc acid	0.40	U	ng/L
N-Me perfluorooctanesulfonamidoAc acid	0.40	U	ng/L
Perfluorobutanesulfonic acid (PFBS)	0.40	U	ng/L
Perfluorodecanesulfonic acid (PFDS)	0.40	U	ng/L
Perfluorodecanoic acid (PFDA)	1.0	U	ng/L
Perfluorododecanoic acid (PFDoA)	1.0	U	ng/L
Perfluoroheptanesulfonic acid (PFHpS)	0.40	U	ng/L
Perfluoroheptanoic acid (PFHpA)	2.0	U	ng/L
Perfluorohexanesulfonic acid (PFHxS)	0.40	U	ng/L
Perfluorohexanoic acid (PFHxA)	2.0	U	ng/L
Perfluorononanesulfonic acid (PFNS)	0.40	U	ng/L
Perfluorononanoic acid (PFNA)	1.0	U	ng/L
Perfluorooctanesulfonic acid (PFOS)	2.0	U	ng/L
Perfluorooctanoic acid (PFOA)	1.0	U	ng/L
Perfluoropentanesulfonic acid (PFPeS)	0.40	U	ng/L
Perfluoropentanoic acid (PFPeA)	4.0	U	ng/L
Perfluorotetradecanoic acid (PFTeA)	0.40	U	ng/L
Perfluorotridecanoic acid (PFTriA)	0.40	U	ng/L
Perfluoroundecanoic acid (PFUnA)	1.0	U	ng/L

Reference Method: EPA 8321B
Batch ID: P381075

Component	Result	Code	Units
4:2 Fluorotelomer sulfonate (4:2 FTS)	2.0	U	ng/L
6:2 Fluorotelomer sulfonate (6:2 FTS)	4.0	U	ng/L
8:2 Fluorotelomer sulfonate (8:2 FTS)	2.0	U	ng/L
N-Et perfluorooctanesulfonamidoAc acid	0.40	U	ng/L
N-Me perfluorooctanesulfonamidoAc acid	0.40	U	ng/L
Perfluorobutanesulfonic acid (PFBS)	0.40	U	ng/L
Perfluorodecanesulfonic acid (PFDS)	0.40	U	ng/L
Perfluorodecanoic acid (PFDA)	1.0	U	ng/L
Perfluorododecanoic acid (PFDoA)	1.0	U	ng/L
Perfluoroheptanesulfonic acid (PFHpS)	0.40	U	ng/L
Perfluoroheptanoic acid (PFHpA)	2.0	U	ng/L
Perfluorohexanesulfonic acid (PFHxS)	0.40	U	ng/L
Perfluorohexanoic acid (PFHxA)	2.0	U	ng/L
Perfluorononanesulfonic acid (PFNS)	0.40	U	ng/L
Perfluorononanoic acid (PFNA)	1.0	U	ng/L
Perfluorooctanesulfonic acid (PFOS)	2.0	U	ng/L
Perfluorooctanoic acid (PFOA)	1.0	U	ng/L
Perfluoropentanesulfonic acid (PFPeS)	0.40	U	ng/L
Perfluoropentanoic acid (PFPeA)	4.0	U	ng/L
Perfluorotetradecanoic acid (PFTeA)	0.40	U	ng/L
Perfluorotridecanoic acid (PFTriA)	0.40	U	ng/L
Perfluoroundecanoic acid (PFUnA)	1.0	U	ng/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 6020A
Batch ID: P380369

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	96.6		P	85 - 115
Barium	95.8		P	85 - 115
Cadmium	96.7		P	85 - 115
Chromium	100		P	85 - 115
Lead	94.2		P	85 - 115
Selenium	95.9		P	85 - 115
Silver	97.7		P	85 - 115

Reference Method: EPA 7473
Batch ID: P380964

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Mercury	99.3		P	80 - 120

Reference Method: EPA 8260D
Batch ID: P380474

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1,1-Dichloroethane	100	97.5	P/P	70 - 130
1,1-Dichloroethene	96.0	93.8	P/P	70 - 130
1,1,1-Trichloroethane	99.7	97.4	P/P	70 - 130
1,1,2-Trichloroethane	103	102	P/P	70 - 130
1,1,2,2-Tetrachloroethane	98.6	96.4	P/P	60 - 140
1,2-Dichlorobenzene	99.0	96.8	P/P	70 - 130
1,2-Dichloroethane	100	98.1	P/P	70 - 130
1,2-Dichloropropane	105	103	P/P	70 - 130
1,3-Dichlorobenzene	97.3	94.6	P/P	70 - 130
1,4-Dichlorobenzene	99.0	96.8	P/P	70 - 130
2-Butanone	98.4	97.4	P/P	60 - 140
Benzene	102	100	P/P	70 - 130
Bromodichloromethane	98.6	96.0	P/P	70 - 130
Bromoform	81.1	79.8	P/P	60 - 140
Bromomethane	81.9	80.0	P/P	60 - 140
Carbon tetrachloride	99.0	96.9	P/P	70 - 130
Chlorobenzene	102	99.4	P/P	70 - 130
Chloroethane	86.6	83.2	P/P	60 - 140
Chloroform	102	99.6	P/P	70 - 130
Chloromethane	75.1	72.0	P/P	60 - 140
cis-1,2-Dichloroethene	101	98.2	P/P	70 - 130
cis-1,3-Dichloropropene	106	103	P/P	60 - 140
Dibromochloromethane	92.6	91.7	P/P	60 - 140
Ethylbenzene	101	97.4	P/P	70 - 130
m,p-Xylene	102	98.0	P/P	70 - 130
Methyl-t-butyl ether	97.0	94.8	P/P	70 - 130
Methylene chloride	100	97.4	P/P	70 - 130
o-Xylene	97.5	93.7	P/P	70 - 130
Tetrachloroethene	101	99.0	P/P	70 - 130
Toluene	106	103	P/P	70 - 130
trans-1,2-Dichloroethene	99.8	97.8	P/P	70 - 130
trans-1,3-Dichloropropene	91.5	90.1	P/P	60 - 140
Trichloroethene	102	100	P/P	70 - 130
Trichlorofluoromethane	91.7	89.6	P/P	60 - 140

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8260D
Batch ID: P380474

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Vinyl chloride	80.4	77.6	P/P	60 - 140

Reference Method: EPA 8270E
Batch ID: P380263

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1-Methylnaphthalene	114		P	50 - 130
1-Naphthylamine	26.9		P	20 - 130
1,2,4-Trichlorobenzene	122		P	50 - 130
1,2,4,5-Tetrachlorobenzene	124		P	50 - 130
1,3-Dinitrobenzene	122		P	50 - 130
1,3,5-Trinitrobenzene	104		P	50 - 150
2-Acetylaminofluorene	122		P	50 - 130
2-Chloronaphthalene	117		P	50 - 130
2-Chlorophenol	117		P	50 - 130
2-Methyl-4,6-dinitrophenol	133		P	50 - 150
2-Methylnaphthalene	113		P	50 - 130
2-Naphthylamine	23.2		P	20 - 130
2-Nitroaniline	111		P	50 - 130
2-Nitrophenol	105		P	50 - 130
2-Picoline	93.0		P	50 - 130
2,3,4,6-Tetrachlorophenol	122		P	50 - 130
2,4-Dichlorophenol	116		P	50 - 130
2,4-Dimethylphenol	108		P	50 - 119
2,4-Dinitrophenol	76.6		P	30 - 160
2,4-Dinitrotoluene	110		P	50 - 130
2,4,5-Trichlorophenol	95.7		P	50 - 130
2,4,6-Trichlorophenol	99.4		P	50 - 130
2,6-Dichlorophenol	126		P	50 - 130
2,6-Dinitrotoluene	124		P	50 - 130
3-Methylcholanthrene	122		P	50 - 130
3,3'-Dichlorobenzidine	90.4		P	20 - 200
4-Aminobiphenyl	118		P	30 - 130
4-Bromophenyl phenyl ether	128		P	50 - 130
4-Chloro-3-methylphenol	119		P	50 - 130
4-Chlorophenyl phenyl ether	119		P	50 - 130
4-Nitrophenol	82.6		P	15 - 110
5-Nitro-o-toluidine	97.0		P	50 - 130
7,12-Dimethylbenz(a)anthracene	129		P	50 - 130
Acenaphthene	119		P	50 - 130
Acenaphthylene	115		P	50 - 130
Acetophenone	122		P	50 - 130
Aniline	120		P	30 - 130
Anthracene	127		P	50 - 130
Azobenzene/1,2-Diphenylhydrazine	115		P	50 - 130
Benzidine	138		P	0.0 - 240
Benzo(a)anthracene	126		P	50 - 130
Benzo(a)pyrene	128		P	50 - 130
Benzo(b)fluoranthene	118		P	50 - 130
Benzo(g,h,i)perylene	128		P	50 - 130
Benzo(k)fluoranthene	125		P	50 - 130
Benzyl alcohol	104		P	50 - 130

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
 Batch ID: P380263

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bis(2-chloroethoxy)methane	118		P	50 - 130
Bis(2-chloroethyl)ether	120		P	50 - 160
Bis(2-chloroisopropyl)ether	88.7		P	50 - 130
Bis(2-ethylhexyl)phthalate	151		P	50 - 160
Butyl benzyl phthalate	140		P	50 - 160
Carbazole	116		P	50 - 130
Chrysene	127		P	50 - 130
Di-n-butyl phthalate	117		P	50 - 130
Di-n-octyl phthalate	126		P	50 - 130
Dibenzo(a,h)anthracene	125		P	50 - 130
Dibenzofuran	115		P	50 - 130
Diethyl phthalate	115		P	50 - 130
Dimethyl phthalate	122		P	50 - 130
Dimethylaminoazobenzene	127		P	50 - 130
Dinoseb	135		P	50 - 150
Ethyl methanesulfonate	121		P	50 - 130
Fluoranthene	126		P	50 - 130
Fluorene	108		P	50 - 130
Hexachlorobenzene	129		P	50 - 130
Hexachlorobutadiene	122		P	24 - 130
Hexachlorocyclopentadiene	116		P	20 - 130
Hexachloroethane	117		P	40 - 130
Hexachloropropene	118		P	50 - 130
Indeno(1,2,3-cd)pyrene	125		P	50 - 130
Isophorone	118		P	50 - 130
Isosafrole	125		P	50 - 130
m,p-Cresols	85.9		P	50 - 130
N-Nitrosodi-n-butylamine	127		P	50 - 130
N-Nitrosodi-n-propylamine	112		P	50 - 130
N-Nitrosodiethylamine	122		P	50 - 130
N-Nitrosodimethylamine	61.2		P	30 - 130
N-Nitrosodiphenylamine/ Diphenylamine	154		P	50 - 160
N-Nitrosomethylethylamine	116		P	50 - 130
N-Nitrosomorpholine	107		P	50 - 150
N-Nitrosopiperidine	125		P	50 - 130
N-Nitrosopyrrolidine	121		P	50 - 130
Naphthalene	121		P	50 - 130
Nitrobenzene	112		P	50 - 130
o-Cresol	100		P	50 - 130
o-Toluidine	123		P	50 - 130
Pentachlorobenzene	123		P	50 - 130
Pentachloroethane	117		P	50 - 130
Pentachloronitrobenzene	129		P	50 - 130
Pentachlorophenol	120		P	50 - 130
Phenacetin	118		P	50 - 130
Phenanthrene	127		P	50 - 130
Phenol	63.7		P	15 - 110
Pyrene	121		P	50 - 130
Pyridine	66.8		P	20 - 130
Safrole	129		P	50 - 130

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P380269

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	130	135	P/P	30 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	113	150	P/P	30 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	154	156	P/P	30 - 160
N-Et perfluorooctanesulfonamidoAc acid	74.9	83.3	P/P	30 - 160
N-Me perfluorooctanesulfonamidoAc acid	102	119	P/P	30 - 160
Perfluorobutanesulfonic acid (PFBS)	110	114	P/P	30 - 160
Perfluorodecanesulfonic acid (PFDS)	70.1	89.4	P/P	30 - 160
Perfluorodecanoic acid (PFDA)	94.9	128	P/P	30 - 160
Perfluorododecanoic acid (PFDoA)	60.4	67.0	P/P	30 - 160
Perfluoroheptanesulfonic acid (PFHpS)	100	115	P/P	30 - 160
Perfluoroheptanoic acid (PFHpA)	75.6	114	P/P	30 - 160
Perfluorohexanesulfonic acid (PFHxS)	77.2	87.1	P/P	30 - 160
Perfluorohexanoic acid (PFHxA)	78.4	96.1	P/P	30 - 160
Perfluorononanesulfonic acid (PFNS)	69.1	78.6	P/P	30 - 160
Perfluorononanoic acid (PFNA)	111	100	P/P	30 - 160
Perfluorooctanesulfonic acid (PFOS)	71.1	82.8	P/P	30 - 160
Perfluorooctanoic acid (PFOA)	103	109	P/P	30 - 160
Perfluoropentanesulfonic acid (PFPeS)	107	114	P/P	30 - 160
Perfluoropentanoic acid (PFPeA)	81.7	96.0	P/P	30 - 160
Perfluorotetradecanoic acid (PFTeA)	48.4	51.3	P/P	30 - 160
Perfluorotridecanoic acid (PFTriA)	50.1	81.5	P/P	30 - 160
Perfluoroundecanoic acid (PFUnA)	109	117	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P381075

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	107		P	30 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	130		P	30 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	137		P	30 - 160
N-Et perfluorooctanesulfonamidoAc acid	84.9		P	30 - 160
N-Me perfluorooctanesulfonamidoAc acid	107		P	30 - 160
Perfluorobutanesulfonic acid (PFBS)	117		P	30 - 160
Perfluorodecanesulfonic acid (PFDS)	96.1		P	30 - 160
Perfluorodecanoic acid (PFDA)	102		P	30 - 160
Perfluorododecanoic acid (PFDoA)	81.6		P	30 - 160
Perfluoroheptanesulfonic acid (PFHpS)	91.4		P	30 - 160
Perfluoroheptanoic acid (PFHpA)	66.3		P	30 - 160
Perfluorohexanesulfonic acid (PFHxS)	128		P	30 - 160
Perfluorohexanoic acid (PFHxA)	92.9		P	30 - 160
Perfluorononanesulfonic acid (PFNS)	72.1		P	30 - 160
Perfluorononanoic acid (PFNA)	145		P	30 - 160
Perfluorooctanesulfonic acid (PFOS)	82.6		P	30 - 160
Perfluorooctanoic acid (PFOA)	83.0		P	30 - 160
Perfluoropentanesulfonic acid (PFPeS)	83.7		P	30 - 160
Perfluoropentanoic acid (PFPeA)	106		P	30 - 160
Perfluorotetradecanoic acid (PFTeA)	61.0		P	30 - 160
Perfluorotridecanoic acid (PFTriA)	60.6		P	30 - 160
Perfluoroundecanoic acid (PFUnA)	56.7		P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 6020A
 Batch ID: P380369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163050	Arsenic	98.2	100	P/P	80 - 120
2163050	Cadmium	96.5	97.3	P/P	80 - 120
2163050	Chromium	97.9	101	P/P	80 - 120
2163050	Lead	93.8	94.0	P/P	80 - 120
2163050	Selenium	98.1	97.8	P/P	80 - 120
2163050	Silver	93.0	97.9	P/P	80 - 120

Reference Method: EPA 7473
 Batch ID: P380964

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2166517	Mercury	99.4	99.6	P/P	80 - 120

Reference Method: EPA 8260D
 Batch ID: P380474

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162258	1,1-Dichloroethane	94.6	105	P/P	70 - 130
2162258	1,1-Dichloroethene	83.6	98.0	P/P	70 - 130
2162258	1,1,1-Trichloroethane	95.0	104	P/P	70 - 130
2162258	1,1,2-Trichloroethane	103	104	P/P	70 - 130
2162258	1,1,2,2-Tetrachloroethane	98.0	101	P/P	60 - 140
2162258	1,2-Dichlorobenzene	93.6	96.7	P/P	70 - 130
2162258	1,2-Dichloroethane	96.6	98.8	P/P	70 - 130
2162258	1,2-Dichloropropane	102	100	P/P	70 - 130
2162258	1,3-Dichlorobenzene	92.7	94.8	P/P	70 - 130
2162258	1,4-Dichlorobenzene	93.5	96.6	P/P	70 - 130
2162258	2-Butanone	80.0	81.4	P/P	60 - 140
2162258	Benzene	99.2	104	P/P	70 - 130
2162258	Bromodichloromethane	96.4	97.4	P/P	70 - 130
2162258	Bromoform	73.2	78.1	P/P	60 - 140
2162258	Bromomethane	76.4	85.9	P/P	60 - 140
2162258	Carbon tetrachloride	91.6	104	P/P	70 - 130
2162258	Chlorobenzene	99.6	102	P/P	70 - 130
2162258	Chloroethane	81.0	91.2	P/P	60 - 140
2162258	Chloroform	96.1	106	P/P	70 - 130
2162258	Chloromethane	82.6	88.2	P/P	60 - 140
2162258	cis-1,2-Dichloroethene	90.3	107	P/P	70 - 130
2162258	cis-1,3-Dichloropropene	102	99.6	P/P	60 - 140
2162258	Dibromochloromethane	97.2	96.7	P/P	60 - 140
2162258	Ethylbenzene	93.3	97.2	P/P	70 - 130
2162258	m,p-Xylene	92.4	97.6	P/P	70 - 130
2162258	Methyl-t-butyl ether	90.8	87.4	P/P	70 - 130
2162258	Methylene chloride	87.7	100	P/P	70 - 130
2162258	o-Xylene	86.6	92.3	P/P	70 - 130
2162258	Tetrachloroethene	110	109	P/P	70 - 130
2162258	Toluene	99.4	96.9	P/P	70 - 130
2162258	trans-1,2-Dichloroethene	89.8	104	P/P	70 - 130
2162258	trans-1,3-Dichloropropene	94.8	94.4	P/P	60 - 140
2162258	Trichloroethene	96.8	103	P/P	70 - 130
2162258	Trichlorofluoromethane	79.2	93.0	P/P	60 - 140
2162258	Vinyl chloride	92.0	104	P/P	60 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
 Batch ID: P380263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163288	1-Methylnaphthalene	115	113	P/P	50 - 130
2163288	1-Naphthylamine	20.6	21.4	P/P	20 - 130
2163288	1,2,4-Trichlorobenzene	116	110	P/P	50 - 130
2163288	1,2,4,5-Tetrachlorobenzene	119	123	P/P	50 - 130
2163288	1,3-Dinitrobenzene	116	116	P/P	50 - 130
2163288	1,3,5-Trinitrobenzene	95.3	90.3	P/P	50 - 150
2163288	2-Acetylaminofluorene	121	127	P/P	50 - 130
2163288	2-Chloronaphthalene	115	116	P/P	50 - 130
2163288	2-Chlorophenol	113	108	P/P	50 - 130
2163288	2-Methyl-4,6-dinitrophenol	142	144	P/P	50 - 150
2163288	2-Methylnaphthalene	112	112	P/P	50 - 130
2163288	2-Naphthylamine	10.6	10.0	F/F	20 - 130
2163288	2-Nitroaniline	101	102	P/P	50 - 130
2163288	2-Nitrophenol	109	108	P/P	50 - 130
2163288	2-Picoline	88.3	95.5	P/P	50 - 130
2163288	2,3,4,6-Tetrachlorophenol	130	128	P/P	50 - 130
2163288	2,4-Dichlorophenol	117	113	P/P	50 - 130
2163288	2,4-Dimethylphenol	117	112	P/P	50 - 119
2163288	2,4-Dinitrophenol	107	114	P/P	30 - 160
2163288	2,4-Dinitrotoluene	106	108	P/P	50 - 130
2163288	2,4,5-Trichlorophenol	98.1	104	P/P	50 - 130
2163288	2,4,6-Trichlorophenol	103	106	P/P	50 - 130
2163288	2,6-Dichlorophenol	124	127	P/P	50 - 130
2163288	2,6-Dinitrotoluene	129	122	P/P	50 - 130
2163288	3-Methylcholanthrene	120	116	P/P	50 - 130
2163288	3,3'-Dichlorobenzidine	28.8	21.9	P/P	20 - 200
2163288	4-Aminobiphenyl	46.9	49.6	P/P	30 - 130
2163288	4-Bromophenyl phenyl ether	126	127	P/P	50 - 130
2163288	4-Chloro-3-methylphenol	117	117	P/P	50 - 130
2163288	4-Chlorophenyl phenyl ether	118	120	P/P	50 - 130
2163288	4-Nitrophenol	82.1	84.4	P/P	15 - 110
2163288	5-Nitro-o-toluidine	95.1	90.7	P/P	50 - 130
2163288	7,12-Dimethylbenz(a)anthracene	113	109	P/P	50 - 130
2163288	Acenaphthene	117	116	P/P	50 - 130
2163288	Acenaphthylene	113	114	P/P	50 - 130
2163288	Acetophenone	116	121	P/P	50 - 130
2163288	Aniline	116	105	P/P	30 - 130
2163288	Anthracene	121	120	P/P	50 - 130
2163288	Azobenzene/1,2-Diphenylhydrazine	110	107	P/P	50 - 130
2163288	Benzidine	0.0	0.0	P/P	0.0 - 240
2163288	Benzo(a)anthracene	117	117	P/P	50 - 130
2163288	Benzo(a)pyrene	120	121	P/P	50 - 130
2163288	Benzo(b)fluoranthene	115	114	P/P	50 - 130
2163288	Benzo(g,h,i)perylene	127	126	P/P	50 - 130
2163288	Benzo(k)fluoranthene	129	119	P/P	50 - 130
2163288	Benzyl alcohol	99.3	92.6	P/P	50 - 130
2163288	Bis(2-chloroethoxy)methane	116	111	P/P	50 - 130
2163288	Bis(2-chloroethyl)ether	119	110	P/P	50 - 160
2163288	Bis(2-chloroisopropyl)ether	86.6	80.1	P/P	50 - 130
2163288	Bis(2-ethylhexyl)phthalate	141	135	P/P	50 - 160
2163288	Butyl benzyl phthalate	128	127	P/P	50 - 160
2163288	Carbazole	119	121	P/P	50 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
 Batch ID: P380263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163288	Chrysene	123	122	P/P	50 - 130
2163288	Di-n-butyl phthalate	110	111	P/P	50 - 130
2163288	Di-n-octyl phthalate	120	119	P/P	50 - 130
2163288	Dibenzo(a,h)anthracene	129	128	P/P	50 - 130
2163288	Dibenzofuran	113	114	P/P	50 - 130
2163288	Diethyl phthalate	114	116	P/P	50 - 130
2163288	Dimethyl phthalate	123	124	P/P	50 - 130
2163288	Dimethylaminoazobenzene	125	121	P/P	50 - 130
2163288	Dinoseb	138	135	P/P	50 - 150
2163288	Ethyl methanesulfonate	114	119	P/P	50 - 130
2163288	Fluoranthene	123	123	P/P	50 - 130
2163288	Fluorene	106	107	P/P	50 - 130
2163288	Hexachlorobenzene	127	127	P/P	50 - 130
2163288	Hexachlorobutadiene	116	110	P/P	24 - 130
2163288	Hexachlorocyclopentadiene	97.0	97.7	P/P	20 - 130
2163288	Hexachloroethane	112	105	P/P	40 - 130
2163288	Hexachloropropene	103	111	P/P	50 - 130
2163288	Indeno(1,2,3-cd)pyrene	127	128	P/P	50 - 130
2163288	Isophorone	115	109	P/P	50 - 130
2163288	Isosafrole	124	128	P/P	50 - 130
2163288	m,p-Cresols	103	82.4	P/P	50 - 130
2163288	N-Nitrosodi-n-butylamine	122	125	P/P	50 - 130
2163288	N-Nitrosodi-n-propylamine	112	104	P/P	50 - 130
2163288	N-Nitrosodiethylamine	117	122	P/P	50 - 130
2163288	N-Nitrosodimethylamine	57.7	54.3	P/P	30 - 130
2163288	N-Nitrosodiphenylamine/ Diphenylamine	154	156	P/P	50 - 160
2163288	N-Nitrosomethylethylamine	110	111	P/P	50 - 130
2163288	N-Nitrosomorpholine	99.8	104	P/P	50 - 150
2163288	N-Nitrosopiperidine	120	123	P/P	50 - 130
2163288	N-Nitrosopyrrolidine	114	120	P/P	50 - 130
2163288	Naphthalene	141	135	F/F	50 - 130
2163288	Nitrobenzene	114	109	P/P	50 - 130
2163288	o-Cresol	97.0	90.9	P/P	50 - 130
2163288	o-Toluidine	112	118	P/P	50 - 130
2163288	Pentachlorobenzene	127	125	P/P	50 - 130
2163288	Pentachloroethane	109	114	P/P	50 - 130
2163288	Pentachloronitrobenzene	135	133	F/F	50 - 130
2163288	Pentachlorophenol	127	129	P/P	50 - 130
2163288	Phenacetin	119	114	P/P	50 - 130
2163288	Phenanthrene	120	120	P/P	50 - 130
2163288	Phenol	56.1	51.8	P/P	15 - 110
2163288	Pyrene	111	110	P/P	50 - 130
2163288	Pyridine	67.6	57.3	P/P	20 - 130
2163288	Safrole	124	128	P/P	50 - 130

Reference Method: EPA 8321B
 Batch ID: P381075

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2165251	4:2 Fluorotelomer sulfonate (4:2 FTS)	119	134	P/P	30 - 160
2165251	6:2 Fluorotelomer sulfonate (6:2 FTS)	189	264	F/F	30 - 160
2165251	8:2 Fluorotelomer sulfonate (8:2 FTS)	132	112	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P381075

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2165251	N-Et perfluorooctanesulfonamidoAc acid	85.8	113	P/P	30 - 160
2165251	N-Me perfluorooctanesulfonamidoAc acid	115	126	P/P	30 - 160
2165251	Perfluorodecanesulfonic acid (PFDS)	90.2	107	P/P	30 - 160
2165251	Perfluorodecanoic acid (PFDA)	75.8	85.7	P/P	30 - 160
2165251	Perfluorododecanoic acid (PFDoA)	87.2	103	P/P	30 - 160
2165251	Perfluoroheptanesulfonic acid (PFHpS)	78.3	72.6	P/P	30 - 160
2165251	Perfluorononanesulfonic acid (PFNS)	62.9	78.7	P/P	30 - 160
2165251	Perfluorononanoic acid (PFNA)	102	123	P/P	30 - 160
2165251	Perfluoropentanesulfonic acid (PFPeS)	79.5	129	P/P	30 - 160
2165251	Perfluorotetradecanoic acid (PFTeA)	77.9	86.3	P/P	30 - 160
2165251	Perfluorotridecanoic acid (PFTriA)	71.6	76.9	P/P	30 - 160
2165251	Perfluoroundecanoic acid (PFUnA)	66.2	84.4	P/P	30 - 160

Quality Assurance Report Precision

Reference Method: EPA 6020A
 Batch ID: P380369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163050	Arsenic	2.10	Spike	P	0 - 20
2163050	Barium	3.03	Spike	P	0 - 20
2163050	Cadmium	0.835	Spike	P	0 - 20
2163050	Chromium	2.86	Spike	P	0 - 20
2163050	Lead	0.312	Spike	P	0 - 20
2163050	Selenium	0.295	Spike	P	0 - 20
2163050	Silver	5.12	Spike	P	0 - 20

Reference Method: EPA 7473
 Batch ID: P380964

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2166517	Mercury	0.203	Spike	P	0 - 20

Reference Method: EPA 8260D
 Batch ID: P380474

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162258	1,1-Dichloroethane	10.5	Spike	P	0 - 30
2162258	1,1-Dichloroethene	15.7	Spike	P	0 - 30
2162258	1,1,1-Trichloroethane	9.15	Spike	P	0 - 30
2162258	1,1,2-Trichloroethane	0.484	Spike	P	0 - 30
2162258	1,1,2,2-Tetrachloroethane	2.67	Spike	P	0 - 30
2162258	1,2-Dichlorobenzene	3.31	Spike	P	0 - 30
2162258	1,2-Dichloroethane	2.20	Spike	P	0 - 30
2162258	1,2-Dichloropropane	1.53	Spike	P	0 - 30
2162258	1,3-Dichlorobenzene	2.19	Spike	P	0 - 30
2162258	1,4-Dichlorobenzene	3.31	Spike	P	0 - 30
2162258	2-Butanone	1.73	Spike	P	0 - 30
2162258	Benzene	4.29	Spike	P	0 - 30
2162258	Bromodichloromethane	0.929	Spike	P	0 - 30
2162258	Bromoform	6.41	Spike	P	0 - 30
2162258	Bromomethane	11.6	Spike	P	0 - 30
2162258	Carbon tetrachloride	12.7	Spike	P	0 - 30
2162258	Chlorobenzene	1.94	Spike	P	0 - 30
2162258	Chloroethane	11.9	Spike	P	0 - 30
2162258	Chloroform	9.75	Spike	P	0 - 30
2162258	Chloromethane	6.50	Spike	P	0 - 30
2162258	cis-1,2-Dichloroethene	10.2	Spike	P	0 - 30
2162258	cis-1,3-Dichloropropene	2.28	Spike	P	0 - 30
2162258	Dibromochloromethane	0.516	Spike	P	0 - 30
2162258	Ethylbenzene	4.09	Spike	P	0 - 30
2162258	m,p-Xylene	5.42	Spike	P	0 - 30
2162258	Methyl-t-butyl ether	3.76	Spike	P	0 - 30
2162258	Methylene chloride	13.6	Spike	P	0 - 30
2162258	o-Xylene	6.37	Spike	P	0 - 30
2162258	Tetrachloroethene	0.821	Spike	P	0 - 30
2162258	Toluene	2.55	Spike	P	0 - 30
2162258	trans-1,2-Dichloroethene	14.2	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8260D
 Batch ID: P380474

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162258	trans-1,3-Dichloropropene	0.423	Spike	P	0 - 30
2162258	Trichloroethene	5.72	Spike	P	0 - 30
2162258	Trichlorofluoromethane	16.0	Spike	P	0 - 30
2162258	Vinyl chloride	11.7	Spike	P	0 - 30
LFB	1,1-Dichloroethane	2.63	LCS	P	0 - 30
LFB	1,1-Dichloroethene	2.32	LCS	P	0 - 30
LFB	1,1,1-Trichloroethane	2.39	LCS	P	0 - 30
LFB	1,1,2-Trichloroethane	0.831	LCS	P	0 - 30
LFB	1,1,2,2-Tetrachloroethane	2.15	LCS	P	0 - 30
LFB	1,2-Dichlorobenzene	2.15	LCS	P	0 - 30
LFB	1,2-Dichloroethane	1.97	LCS	P	0 - 30
LFB	1,2-Dichloropropane	2.11	LCS	P	0 - 30
LFB	1,3-Dichlorobenzene	2.76	LCS	P	0 - 30
LFB	1,4-Dichlorobenzene	2.15	LCS	P	0 - 30
LFB	2-Butanone	1.02	LCS	P	0 - 30
LFB	Benzene	2.12	LCS	P	0 - 30
LFB	Bromodichloromethane	2.62	LCS	P	0 - 30
LFB	Bromoform	1.55	LCS	P	0 - 30
LFB	Bromomethane	2.35	LCS	P	0 - 30
LFB	Carbon tetrachloride	2.19	LCS	P	0 - 30
LFB	Chlorobenzene	2.63	LCS	P	0 - 30
LFB	Chloroethane	4.00	LCS	P	0 - 30
LFB	Chloroform	2.04	LCS	P	0 - 30
LFB	Chloromethane	4.15	LCS	P	0 - 30
LFB	cis-1,2-Dichloroethene	2.46	LCS	P	0 - 30
LFB	cis-1,3-Dichloropropene	2.30	LCS	P	0 - 30
LFB	Dibromochloromethane	0.923	LCS	P	0 - 30
LFB	Ethylbenzene	3.68	LCS	P	0 - 30
LFB	m,p-Xylene	3.53	LCS	P	0 - 30
LFB	Methyl-t-butyl ether	2.35	LCS	P	0 - 30
LFB	Methylene chloride	2.84	LCS	P	0 - 30
LFB	o-Xylene	3.97	LCS	P	0 - 30
LFB	Tetrachloroethene	1.85	LCS	P	0 - 30
LFB	Toluene	3.21	LCS	P	0 - 30
LFB	trans-1,2-Dichloroethene	2.07	LCS	P	0 - 30
LFB	trans-1,3-Dichloropropene	1.54	LCS	P	0 - 30
LFB	Trichloroethene	1.97	LCS	P	0 - 30
LFB	Trichlorofluoromethane	2.26	LCS	P	0 - 30
LFB	Vinyl chloride	3.42	LCS	P	0 - 30

Reference Method: EPA 8270E
 Batch ID: P380263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163288	1-Methylnaphthalene	2.51	Spike	P	0 - 40
2163288	1-Naphthylamine	4.75	Spike	P	0 - 40
2163288	1,2,4-Trichlorobenzene	5.36	Spike	P	0 - 40
2163288	1,2,4,5-Tetrachlorobenzene	4.58	Spike	P	0 - 40
2163288	1,3-Dinitrobenzene	1.33	Spike	P	0 - 40
2163288	1,3,5-Trinitrobenzene	4.45	Spike	P	0 - 40

Quality Assurance Report Precision

Reference Method: EPA 8270E
 Batch ID: P380263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163288	2-Acetylaminofluorene	5.37	Spike	P	0 - 40
2163288	2-Chloronaphthalene	0.334	Spike	P	0 - 40
2163288	2-Chlorophenol	6.01	Spike	P	0 - 40
2163288	2-Methyl-4,6-dinitrophenol	0.178	Spike	P	0 - 40
2163288	2-Methylnaphthalene	0.761	Spike	P	0 - 40
2163288	2-Naphthylamine	4.89	Spike	P	0 - 40
2163288	2-Nitroaniline	0.250	Spike	P	0 - 40
2163288	2-Nitrophenol	2.32	Spike	P	0 - 40
2163288	2-Picoline	8.77	Spike	P	0 - 40
2163288	2,3,4,6-Tetrachlorophenol	0.653	Spike	P	0 - 40
2163288	2,4-Dichlorophenol	4.67	Spike	P	0 - 40
2163288	2,4-Dimethylphenol	5.31	Spike	P	0 - 40
2163288	2,4-Dinitrophenol	5.05	Spike	P	0 - 40
2163288	2,4-Dinitrotoluene	1.03	Spike	P	0 - 40
2163288	2,4,5-Trichlorophenol	4.52	Spike	P	0 - 40
2163288	2,4,6-Trichlorophenol	2.21	Spike	P	0 - 40
2163288	2,6-Dichlorophenol	3.25	Spike	P	0 - 40
2163288	2,6-Dinitrotoluene	6.19	Spike	P	0 - 40
2163288	3-Methylcholanthrene	2.11	Spike	P	0 - 40
2163288	3,3'-Dichlorobenzidine	28.0	Spike	P	0 - 40
2163288	4-Aminobiphenyl	6.53	Spike	P	0 - 40
2163288	4-Bromophenyl phenyl ether	0.465	Spike	P	0 - 40
2163288	4-Chloro-3-methylphenol	0.854	Spike	P	0 - 40
2163288	4-Chlorophenyl phenyl ether	0.738	Spike	P	0 - 40
2163288	4-Nitrophenol	1.82	Spike	P	0 - 40
2163288	5-Nitro-o-toluidine	3.80	Spike	P	0 - 40
2163288	7,12-Dimethylbenz(a)anthracene	1.94	Spike	P	0 - 40
2163288	Acenaphthene	2.23	Spike	P	0 - 40
2163288	Acenaphthylene	0.322	Spike	P	0 - 40
2163288	Acetophenone	4.56	Spike	P	0 - 40
2163288	Aniline	10.5	Spike	P	0 - 40
2163288	Anthracene	2.02	Spike	P	0 - 40
2163288	Azobenzene/1,2-Diphenylhydrazine	3.34	Spike	P	0 - 40
2163288	Benzo(a)anthracene	0.341	Spike	P	0 - 40
2163288	Benzo(a)pyrene	0.194	Spike	P	0 - 40
2163288	Benzo(b)fluoranthene	1.73	Spike	P	0 - 40
2163288	Benzo(g,h,i)perylene	1.89	Spike	P	0 - 40
2163288	Benzo(k)fluoranthene	8.90	Spike	P	0 - 40
2163288	Benzyl alcohol	7.92	Spike	P	0 - 40
2163288	Bis(2-chloroethoxy)methane	5.68	Spike	P	0 - 40
2163288	Bis(2-chloroethyl)ether	9.07	Spike	P	0 - 40
2163288	Bis(2-chloroisopropyl)ether	8.74	Spike	P	0 - 40
2163288	Bis(2-ethylhexyl)phthalate	4.78	Spike	P	0 - 40
2163288	Butyl benzyl phthalate	2.43	Spike	P	0 - 40
2163288	Carbazole	0.896	Spike	P	0 - 40
2163288	Chrysene	1.59	Spike	P	0 - 40
2163288	Di-n-butyl phthalate	0.305	Spike	P	0 - 40
2163288	Di-n-octyl phthalate	1.78	Spike	P	0 - 40
2163288	Dibenzo(a,h)anthracene	1.33	Spike	P	0 - 40
2163288	Dibenzofuran	0.116	Spike	P	0 - 40
2163288	Diethyl phthalate	0.626	Spike	P	0 - 40

Quality Assurance Report Precision

Reference Method: EPA 8270E
 Batch ID: P380263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163288	Dimethyl phthalate	0.599	Spike	P	0 - 40
2163288	Dimethylaminoazobenzene	2.07	Spike	P	0 - 40
2163288	Dinoseb	1.04	Spike	P	0 - 40
2163288	Ethyl methanesulfonate	5.84	Spike	P	0 - 40
2163288	Fluoranthene	1.10	Spike	P	0 - 40
2163288	Fluorene	0.283	Spike	P	0 - 40
2163288	Hexachlorobenzene	1.18	Spike	P	0 - 40
2163288	Hexachlorobutadiene	5.36	Spike	P	0 - 40
2163288	Hexachlorocyclopentadiene	0.220	Spike	P	0 - 40
2163288	Hexachloroethane	7.40	Spike	P	0 - 40
2163288	Hexachloropropene	8.12	Spike	P	0 - 40
2163288	Indeno(1,2,3-cd)pyrene	0.314	Spike	P	0 - 40
2163288	Isophorone	6.65	Spike	P	0 - 40
2163288	Isosafrole	3.40	Spike	P	0 - 40
2163288	m,p-Cresols	23.1	Spike	P	0 - 40
2163288	N-Nitrosodi-n-butylamine	3.77	Spike	P	0 - 40
2163288	N-Nitrosodi-n-propylamine	8.60	Spike	P	0 - 40
2163288	N-Nitrosodiethylamine	5.37	Spike	P	0 - 40
2163288	N-Nitrosodimethylamine	7.01	Spike	P	0 - 40
2163288	N-Nitrosomethylethylamine	1.03	Spike	P	0 - 40
2163288	N-Nitrosomorpholine	5.25	Spike	P	0 - 40
2163288	N-Nitrosopiperidine	3.91	Spike	P	0 - 40
2163288	N-Nitrosopyrrolidine	6.16	Spike	P	0 - 40
2163288	Naphthalene	5.21	Spike	P	0 - 40
2163288	Nitrobenzene	6.05	Spike	P	0 - 40
2163288	o-Cresol	7.43	Spike	P	0 - 40
2163288	o-Toluidine	6.15	Spike	P	0 - 40
2163288	Pentachlorobenzene	0.492	Spike	P	0 - 40
2163288	Pentachloroethane	5.42	Spike	P	0 - 40
2163288	Pentachloronitrobenzene	0.855	Spike	P	0 - 40
2163288	Pentachlorophenol	0.311	Spike	P	0 - 40
2163288	Phenacetin	2.67	Spike	P	0 - 40
2163288	Phenanthrene	1.02	Spike	P	0 - 40
2163288	Phenol	8.91	Spike	P	0 - 40
2163288	Pyrene	2.12	Spike	P	0 - 40
2163288	Pyridine	17.4	Spike	P	0 - 40
2163288	Safrole	3.56	Spike	P	0 - 40

Reference Method: EPA 8321B
 Batch ID: P380269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	4:2 Fluorotelomer sulfonate (4:2 FTS)	4.45	LCS	P	0 - 30
LFB	6:2 Fluorotelomer sulfonate (6:2 FTS)	28.0	LCS	P	0 - 30
LFB	8:2 Fluorotelomer sulfonate (8:2 FTS)	1.60	LCS	P	0 - 30
LFB	N-Et perfluorooctanesulfonamidoAc acid	10.6	LCS	P	0 - 30
LFB	N-Me perfluorooctanesulfonamidoAc acid	15.8	LCS	P	0 - 30
LFB	Perfluorobutanesulfonic acid (PFBS)	3.17	LCS	P	0 - 30
LFB	Perfluorodecanesulfonic acid (PFDS)	24.3	LCS	P	0 - 30
LFB	Perfluorodecanoic acid (PFDA)	29.4	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P380269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Perfluorododecanoic acid (PFDoA)	10.4	LCS	P	0 - 30
LFB	Perfluoroheptanesulfonic acid (PFHpS)	13.9	LCS	P	0 - 30
LFB	Perfluoroheptanoic acid (PFHpA)	40.5	LCS	F	0 - 30
LFB	Perfluorohexanesulfonic acid (PFHxS)	12.0	LCS	P	0 - 30
LFB	Perfluorohexanoic acid (PFHxA)	20.3	LCS	P	0 - 30
LFB	Perfluorononanesulfonic acid (PFNS)	12.9	LCS	P	0 - 30
LFB	Perfluorononanoic acid (PFNA)	9.50	LCS	P	0 - 30
LFB	Perfluorooctanesulfonic acid (PFOS)	15.2	LCS	P	0 - 30
LFB	Perfluorooctanoic acid (PFOA)	5.45	LCS	P	0 - 30
LFB	Perfluoropentanesulfonic acid (PFPeS)	6.78	LCS	P	0 - 30
LFB	Perfluoropentanoic acid (PFPeA)	16.0	LCS	P	0 - 30
LFB	Perfluorotetradecanoic acid (PFTeA)	5.90	LCS	P	0 - 30
LFB	Perfluorotridecanoic acid (PFTriA)	47.7	LCS	F	0 - 30
LFB	Perfluoroundecanoic acid (PFUnA)	6.73	LCS	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P381075

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2165251	4:2 Fluorotelomer sulfonate (4:2 FTS)	11.7	Spike	P	0 - 30
2165251	6:2 Fluorotelomer sulfonate (6:2 FTS)	33.2	Spike	F	0 - 30
2165251	8:2 Fluorotelomer sulfonate (8:2 FTS)	16.7	Spike	P	0 - 30
2165251	N-Et perfluorooctanesulfonamidoAc acid	27.3	Spike	P	0 - 30
2165251	N-Me perfluorooctanesulfonamidoAc acid	9.25	Spike	P	0 - 30
2165251	Perfluorobutanesulfonic acid (PFBS)	23.8	Spike	P	0 - 30
2165251	Perfluorodecanesulfonic acid (PFDS)	17.2	Spike	P	0 - 30
2165251	Perfluorodecanoic acid (PFDA)	11.3	Spike	P	0 - 30
2165251	Perfluorododecanoic acid (PFDoA)	17.1	Spike	P	0 - 30
2165251	Perfluoroheptanesulfonic acid (PFHpS)	6.51	Spike	P	0 - 30
2165251	Perfluoroheptanoic acid (PFHpA)	26.5	Spike	P	0 - 30
2165251	Perfluorohexanesulfonic acid (PFHxS)	2.59	Spike	P	0 - 30
2165251	Perfluorohexanoic acid (PFHxA)	0.719	Spike	P	0 - 30
2165251	Perfluorononanesulfonic acid (PFNS)	22.3	Spike	P	0 - 30
2165251	Perfluorononanoic acid (PFNA)	15.0	Spike	P	0 - 30
2165251	Perfluorooctanesulfonic acid (PFOS)	26.7	Spike	P	0 - 30
2165251	Perfluorooctanoic acid (PFOA)	11.3	Spike	P	0 - 30
2165251	Perfluoropentanesulfonic acid (PFPeS)	29.2	Spike	P	0 - 30
2165251	Perfluoropentanoic acid (PFPeA)	6.20	Spike	P	0 - 30
2165251	Perfluorotetradecanoic acid (PFTeA)	10.2	Spike	P	0 - 30
2165251	Perfluorotridecanoic acid (PFTriA)	7.08	Spike	P	0 - 30
2165251	Perfluoroundecanoic acid (PFUnA)	24.3	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2162825
 Field Sample ID: IDW 3-4-20

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	2-Fluorobiphenyl	67.5	P	30 - 150
EPA 8270E	2-Fluorophenol	44.9	P	20 - 150
EPA 8270E	2,4,6-Tribromophenol	82.9	P	30 - 150
EPA 8270E	Nitrobenzene-d5	65.2	P	30 - 150
EPA 8270E	Phenol-d5	34.4	P	20 - 150
EPA 8270E	Terphenyl-d14	116	P	30 - 150

Lab Sample ID: 2162828
 Field Sample ID: DEP MW-7(3-13')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	81.7	P	30 - 160
EPA 8321B	Perfluorobutanesulfonate-13C	81.7	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	72.7	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	72.7	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	105	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	105	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	55.0	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	55.0	P	30 - 160

Lab Sample ID: 2162829
 Field Sample ID: DEP MW-7(3-13') DUP

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	97.4	P	30 - 160
EPA 8321B	Perfluorobutanesulfonate-13C	97.4	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	96.2	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	96.2	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	122	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	122	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	79.5	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	79.5	P	30 - 160

Lab Sample ID: 2162830
 Field Sample ID: DEP MW-6(3-13')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	80.5	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	87.7	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	103	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	80.8	P	30 - 160

Lab Sample ID: 2162831
 Field Sample ID: DEP MW-1(3-13')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	91.3	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	83.5	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	99.6	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	56.6	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2162832
 Field Sample ID: DEP MW-4(3-13')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	87.2	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	105	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	95.7	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	64.5	P	30 - 160

Lab Sample ID: 2162833
 Field Sample ID: DEP MW-3(3-13')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	98.4	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	103	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	104	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	84.6	P	30 - 160

Lab Sample ID: 2162834
 Field Sample ID: DEP MW-5(3-13')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	97.1	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	94.6	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	85.5	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	72.7	P	30 - 160

Lab Sample ID: 2162835
 Field Sample ID: DEP MW-9(85-105')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	89.3	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	105	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	93.4	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	71.0	P	30 - 160

Lab Sample ID: 2162836
 Field Sample ID: DEP MW-12(45-65')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	102	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	112	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	86.2	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	69.8	P	30 - 160

Lab Sample ID: 2162837
 Field Sample ID: DEP MW-2(3-13')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	95.2	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	99.4	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	90.6	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	66.9	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2162838
Field Sample ID: DEP MW-8(3-13')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	88.0	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	97.2	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	96.1	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	73.7	P	30 - 160

Lab Sample ID: 2162839
Field Sample ID: DEP MW-13(45-65')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	90.7	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	89.6	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	87.9	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	61.0	P	30 - 160

Lab Sample ID: 2162840
Field Sample ID: DEP MW-13(45-65') DUP

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	96.0	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	112	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	87.8	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	77.2	P	30 - 160

Lab Sample ID: 2162841
Field Sample ID: DEP MW-10(87-107')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	85.4	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	99.8	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	90.8	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	61.5	P	30 - 160

Lab Sample ID: 2162842
Field Sample ID: DEP MW-11(45-65')

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	77.7	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	84.4	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	94.4	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	60.0	P	30 - 160

Lab Sample ID: 2162843
Field Sample ID: FRB 3-4-20

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	80.9	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	101	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	85.3	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	58.9	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2162844
Field Sample ID: IDW 3-4-20

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	105	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	105	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	95.1	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	75.3	P	30 - 160

Lab Sample ID: 2162845
Field Sample ID: IDW 3-4-20

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8260D	1,2-Dichloroethane-d4	113	P	70 - 130
EPA 8260D	1,4-Dichlorobenzene-d4	114	P	70 - 130
EPA 8260D	1,4-Dichlorobenzene-d4	114	P	70 - 130
EPA 8260D	Dibromofluoromethane	121	P	70 - 130
EPA 8260D	Toluene-d8	97.2	P	70 - 130

Lab Sample ID: 2162846
Field Sample ID: Trip Blank

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8260D	1,2-Dichloroethane-d4	114	P	70 - 130
EPA 8260D	1,4-Dichlorobenzene-d4	114	P	70 - 130
EPA 8260D	Dibromofluoromethane	112	P	70 - 130
EPA 8260D	Toluene-d8	82.2	P	70 - 130

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A98126

Included Lab Sample IDs: 2162830, 2162831, 2162832, 2162833, 2162834, 2162835, 2162836, 2162837, 2162838, 2162839, 2162840, 2162841, 2162842, 2162843, 2162844

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	124	148	P/P	60 - 160
4:2 Fluorotelomer sulfonate (4:2 FTS)	126	155	P/P	60 - 160
4:2 Fluorotelomer sulfonate (4:2 FTS)	148	126	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	107	77.3	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	77.3	94.3	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	94.3	74.4	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	111	114	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	112	111	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	114	116	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	106	89.3	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	86.7	106	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	89.3	98.5	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	110	112	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	112	113	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	113	114	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	112	131	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	116	122	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	122	112	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	103	90.4	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	90.4	97.7	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	97.7	89.5	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	101	62.0	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	62.0	89.1	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	89.1	72.2	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	64.5	69.4	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	69.4	78.3	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	78.3	61.0	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	107	107	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	107	113	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	113	108	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	63.0	76.3	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	76.3	65.6	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	87.4	63.0	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	79.7	94.6	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	81.6	89.1	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	89.1	79.7	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	61.4	63.7	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	63.4	61.4	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	63.7	67.2	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	79.3	92.9	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	80.2	88.5	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	88.5	79.3	P/P	60 - 160
Perfluorononanoic acid (PFNA)	79.0	84.4	P/P	60 - 160
Perfluorononanoic acid (PFNA)	84.4	96.6	P/P	60 - 160
Perfluorononanoic acid (PFNA)	96.6	79.0	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	75.5	83.4	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	79.8	75.5	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	82.3	79.8	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	102	74.5	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	72.9	102	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A98126

Included Lab Sample IDs: 2162830, 2162831, 2162832, 2162833, 2162834, 2162835, 2162836, 2162837, 2162838, 2162839, 2162840, 2162841, 2162842, 2162843, 2162844

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Perfluorooctanoic acid (PFOA)	88.2	72.9	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	113	123	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	113	121	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	121	113	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	80.3	81.3	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	80.3	80.3	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	85.9	80.3	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	67.2	72.3	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	68.0	67.2	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	94.2	68.0	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	111	73.3	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	73.3	99.3	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	99.3	82.2	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	114	81.5	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	79.6	95.9	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	81.5	79.6	P/P	60 - 160

Reference Method: EPA 6020A

Run ID: A98137

Included Lab Sample IDs: 2162827

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	101	101	P/P	90 - 110
Barium	97.5	97.3	P/P	90 - 110
Cadmium	97.8	98.9	P/P	90 - 110
Chromium	97.6	98.3	P/P	90 - 110
Lead	96.8	96.8	P/P	90 - 110
Selenium	99.0	98.1	P/P	90 - 110
Silver	94.6	96.8	P/P	90 - 110

Reference Method: EPA 8260D

Run ID: A98148

Included Lab Sample IDs: 2162845, 2162846

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
1,1-Dichloroethane	99.2		P	80 - 120
1,1-Dichloroethene	99.7		P	80 - 120
1,1,1-Trichloroethane	103		P	80 - 120
1,1,2-Trichloroethane	99.7		P	80 - 120
1,1,2,2-Tetrachloroethane	106		P	80 - 120
1,2-Dichlorobenzene	99.0		P	80 - 120
1,2-Dichloroethane	98.8		P	80 - 120
1,2-Dichloropropane	103		P	80 - 120
1,3-Dichlorobenzene	96.0		P	80 - 120
1,4-Dichlorobenzene	99.0		P	80 - 120
2-Butanone	98.7		P	70 - 120
Benzene	102		P	80 - 120
Bromodichloromethane	103		P	80 - 120
Bromoform	83.2		P	80 - 120
Bromomethane	77.4		P	70 - 130

Quality Assurance Report Calibration Verification

Reference Method: EPA 8260D

Run ID: A98148

Included Lab Sample IDs: 2162845, 2162846

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Carbon tetrachloride	95.0		P	80 - 120
Chlorobenzene	100		P	80 - 120
Chloroethane	83.1		P	70 - 130
Chloroform	104		P	80 - 120
Chloromethane	68.6*		F	70 - 130
cis-1,2-Dichloroethene	99.2		P	80 - 120
cis-1,3-Dichloropropene	108		P	80 - 120
Dibromochloromethane	94.7		P	80 - 120
Ethylbenzene	100		P	80 - 120
m,p-Xylene	101		P	80 - 120
Methyl-t-butyl ether	100		P	80 - 120
Methylene chloride	98.7		P	80 - 120
o-Xylene	106		P	80 - 120
Tetrachloroethene	102		P	80 - 120
Toluene	105		P	80 - 120
trans-1,2-Dichloroethene	101		P	80 - 120
trans-1,3-Dichloropropene	91.6		P	80 - 120
Trichloroethene	103		P	80 - 120
Trichlorofluoromethane	84.1		P	70 - 130
Vinyl chloride	82.7		P	70 - 130

Reference Method: EPA 8270E

Run ID: A98152

Included Lab Sample IDs: 2162825

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
1-Methylnaphthalene	94.8		P	70 - 130
1,2,4-Trichlorobenzene	94.6		P	70 - 130
1,2,4,5-Tetrachlorobenzene	94.8		P	70 - 130
1,3-Dinitrobenzene	107		P	70 - 130
1,3,5-Trinitrobenzene	121		P	70 - 130
2-Chloronaphthalene	95.9		P	70 - 130
2-Chlorophenol	93.4		P	70 - 130
2-Methylnaphthalene	94.8		P	70 - 130
2-Nitroaniline	93.4		P	70 - 130
2-Nitrophenol	102		P	70 - 130
2,3,4,6-Tetrachlorophenol	85.0		P	70 - 130
2,4-Dichlorophenol	91.1		P	70 - 130
2,4-Dimethylphenol	88.4		P	70 - 130
2,4-Dinitrotoluene	102		P	70 - 130
2,4,5-Trichlorophenol	81.7		P	70 - 130
2,4,6-Trichlorophenol	98.4		P	70 - 130
2,6-Dichlorophenol	104		P	70 - 130
2,6-Dinitrotoluene	98.1		P	70 - 130
3-Methylcholanthrene	105		P	70 - 130
4-Bromophenyl phenyl ether	96.9		P	70 - 130
4-Chloro-3-methylphenol	88.6		P	70 - 130
4-Chlorophenyl phenyl ether	94.4		P	70 - 130
5-Nitro-o-toluidine	106		P	70 - 130
7,12-Dimethylbenz(a)anthracene	80.8		P	70 - 130
Acenaphthene	95.8		P	70 - 130

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
 Run ID: A98152
 Included Lab Sample IDs: 2162825

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acenaphthylene	98.5		P	70 - 130
Acetophenone	98.5		P	70 - 130
Anthracene	96.9		P	70 - 130
Azobenzene/1,2-Diphenylhydrazine	98.6		P	70 - 130
Benzo(a)anthracene	96.7		P	70 - 130
Benzo(a)pyrene	102		P	70 - 130
Benzo(b)fluoranthene	95.8		P	70 - 130
Benzo(g,h,i)perylene	102		P	70 - 130
Benzo(k)fluoranthene	99.2		P	70 - 130
Benzyl alcohol	99.9		P	70 - 130
Bis(2-chloroethoxy)methane	93.5		P	70 - 130
Bis(2-chloroethyl)ether	101		P	70 - 130
Bis(2-chloroisopropyl)ether	95.3		P	70 - 130
Carbazole	94.8		P	70 - 130
Chrysene	95.8		P	70 - 130
Di-n-octyl phthalate	107		P	70 - 130
Dibenzo(a,h)anthracene	100		P	70 - 130
Dibenzofuran	95.4		P	70 - 130
Dimethyl phthalate	94.7		P	70 - 130
Dimethylaminoazobenzene	116		P	70 - 130
Fluoranthene	96.7		P	70 - 130
Fluorene	95.4		P	70 - 130
Hexachlorobenzene	96.5		P	70 - 130
Hexachlorobutadiene	94.1		P	70 - 130
Hexachlorocyclopentadiene	118		P	70 - 130
Hexachloroethane	94.7		P	70 - 130
Hexachloropropene	100		P	70 - 130
Indeno(1,2,3-cd)pyrene	101		P	70 - 130
Isophorone	95.0		P	70 - 130
Isosafrole	99.6		P	70 - 130
m,p-Cresols	89.6		P	70 - 130
N-Nitrosodi-n-butylamine	104		P	70 - 130
N-Nitrosodi-n-propylamine	101		P	70 - 130
N-Nitrosodiphenylamine/ Diphenylamine	94.0		P	70 - 130
N-Nitrosomorpholine	102		P	70 - 130
N-Nitrosopiperidine	101		P	70 - 130
N-Nitrosopyrrolidine	106		P	70 - 130
Naphthalene	96.2		P	70 - 130
Nitrobenzene	95.5		P	70 - 130
o-Cresol	90.3		P	70 - 130
o-Toluidine	104		P	70 - 130
Pentachlorobenzene	95.4		P	70 - 130
Pentachloroethane	95.5		P	70 - 130
Pentachloronitrobenzene	106		P	70 - 130
Phenacetin	98.9		P	70 - 130
Phenanthrene	93.6		P	70 - 130
Phenol	92.6		P	70 - 130
Pyrene	97.4		P	70 - 130
Safrole	101		P	70 - 130

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A98154
Included Lab Sample IDs: 2162825

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
1-Naphthylamine	72.5		P	60 - 130
2-Acetylaminofluorene	98.0		P	70 - 150
2-Methyl-4,6-dinitrophenol	121		P	70 - 130
2-Naphthylamine	99.2		P	60 - 130
2-Picoline	98.0		P	70 - 130
2,4-Dinitrophenol	106		P	70 - 130
3,3'-Dichlorobenzidine	52.0		P	50 - 130
4-Aminobiphenyl	125		P	70 - 130
4-Nitrophenol	91.0		P	70 - 130
Aniline	75.7		P	70 - 130
Benzidine	54.2		P	50 - 130
Bis(2-ethylhexyl)phthalate	111		P	70 - 130
Butyl benzyl phthalate	108		P	70 - 130
Di-n-butyl phthalate	101		P	70 - 130
Diethyl phthalate	98.6		P	70 - 130
Dinoseb	115		P	70 - 130
Ethyl methanesulfonate	93.4		P	70 - 130
N-Nitrosodiethylamine	101		P	70 - 130
N-Nitrosodimethylamine	84.8		P	70 - 130
N-Nitrosomethylethylamine	99.5		P	70 - 130
Pentachlorophenol	95.7		P	70 - 130
Pyridine	113		P	70 - 130

Reference Method: EPA 7473
Run ID: A98308
Included Lab Sample IDs: 2162826

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Mercury	93.0	98.4	P/P	80 - 120

Reference Method: EPA 8321B
Run ID: A98336
Included Lab Sample IDs: 2162831, 2162834, 2162837, 2162844

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
6:2 Fluorotelomer sulfonate (6:2 FTS)	70.2	86.9	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	114	114	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	84.5	86.7	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	93.8	100	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	78.3	73.6	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	73.7	76.5	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	128	108	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A98385
Included Lab Sample IDs: 2162828, 2162829

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	96.1	72.8	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	136	137	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	86.1	78.7	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A98385

Included Lab Sample IDs: 2162828, 2162829

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
N-Et perfluorooctanesulfonamidoAc acid	110	114	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	112	116	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	136	137	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	103	118	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	86.9	75.5	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	107	95.8	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	69.5	72.7	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	84.1	84.2	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	110	111	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	83.9	84.0	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	67.2	73.4	P/P	60 - 160
Perfluorononanoic acid (PFNA)	103	119	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	82.2	87.2	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	66.6	68.3	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	85.0	91.8	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	105	114	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	86.8	80.4	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	75.0	79.3	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	73.9	80.7	P/P	60 - 160

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision	MS
							SMP	
EPA 6020A	Arsenic	96.6		98.2	100			2.10
	Barium	95.8						3.03
	Cadmium	96.7		96.5	97.3			0.835
	Chromium	100		97.9	101			2.86
	Lead	94.2		93.8	94.0			0.312
	Selenium	95.9		98.1	97.8			0.295
	Silver	97.7		93.0	97.9			5.12
EPA 7473	Mercury	99.3		99.4	99.6			0.203
EPA 8260D	1,1-Dichloroethane	100	97.5	94.6	105	2.63		10.5
	1,1-Dichloroethene	96.0	93.8	83.6	98.0	2.32		15.7
	1,1,1-Trichloroethane	99.7	97.4	95.0	104	2.39		9.15
	1,1,2-Trichloroethane	103	102	103	104	0.831		0.484
	1,1,2,2-Tetrachloroethane	98.6	96.4	98.0	101	2.15		2.67
	1,2-Dichlorobenzene	99.0	96.8	93.6	96.7	2.15		3.31
	1,2-Dichloroethane	100	98.1	96.6	98.8	1.97		2.20
	1,2-Dichloropropane	105	103	102	100	2.11		1.53
	1,3-Dichlorobenzene	97.3	94.6	92.7	94.8	2.76		2.19
	1,4-Dichlorobenzene	99.0	96.8	93.5	96.6	2.15		3.31
	2-Butanone	98.4	97.4	80.0	81.4	1.02		1.73
	Benzene	102	100	99.2	104	2.12		4.29
	Bromodichloromethane	98.6	96.0	96.4	97.4	2.62		0.929
	Bromoform	81.1	79.8	73.2	78.1	1.55		6.41
	Bromomethane	81.9	80.0	76.4	85.9	2.35		11.6
	Carbon tetrachloride	99.0	96.9	91.6	104	2.19		12.7
	Chlorobenzene	102	99.4	99.6	102	2.63		1.94
	Chloroethane	86.6	83.2	81.0	91.2	4.00		11.9
	Chloroform	102	99.6	96.1	106	2.04		9.75
	Chloromethane	75.1	72.0	82.6	88.2	4.15		6.50
	cis-1,2-Dichloroethene	101	98.2	90.3	107	2.46		10.2
	cis-1,3-Dichloropropene	106	103	102	99.6	2.30		2.28
	Dibromochloromethane	92.6	91.7	97.2	96.7	0.923		0.516
	Ethylbenzene	101	97.4	93.3	97.2	3.68		4.09
	m,p-Xylene	102	98.0	92.4	97.6	3.53		5.42
	Methyl-t-butyl ether	97.0	94.8	90.8	87.4	2.35		3.76
	Methylene chloride	100	97.4	87.7	100	2.84		13.6
	o-Xylene	97.5	93.7	86.6	92.3	3.97		6.37
	Tetrachloroethene	101	99.0	110	109	1.85		0.821
	Toluene	106	103	99.4	96.9	3.21		2.55
	trans-1,2-Dichloroethene	99.8	97.8	89.8	104	2.07		14.2
trans-1,3-Dichloropropene	91.5	90.1	94.8	94.4	1.54		0.423	
Trichloroethene	102	100	96.8	103	1.97		5.72	
Trichlorofluoromethane	91.7	89.6	79.2	93.0	2.26		16.0	
Vinyl chloride	80.4	77.6	92.0	104	3.42		11.7	
EPA 8270E	1-Methylnaphthalene	114		115	113			2.51
	1-Naphthylamine	26.9		21.4	20.6			4.75
	1,2,4-Trichlorobenzene	122		116	110			5.36
	1,2,4,5-Tetrachlorobenzene	124		123	119			4.58
	1,3-Dinitrobenzene	122		116	116			1.33
	1,3,5-Trinitrobenzene	104		90.3	95.3			4.45
	2-Acetylaminofluorene	122		127	121			5.37
	2-Chloronaphthalene	117		115	116			0.334
	2-Chlorophenol	117		113	108			6.01
	2-Methyl-4,6-dinitrophenol	133		142	144			0.178
	2-Methylnaphthalene	113		112	112			0.761

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	SMP
EPA 8270E	2-Naphthylamine	23.2	10.0	10.6		4.89
	2-Nitroaniline	111	101	102		0.250
	2-Nitrophenol	105	109	108		2.32
	2-Picoline	93.0	95.5	88.3		8.77
	2,3,4,6-Tetrachlorophenol	122	128	130		0.653
	2,4-Dichlorophenol	116	117	113		4.67
	2,4-Dimethylphenol	108	117	112		5.31
	2,4-Dinitrophenol	76.6	107	114		5.05
	2,4-Dinitrotoluene	110	106	108		1.03
	2,4,5-Trichlorophenol	95.7	98.1	104		4.52
	2,4,6-Trichlorophenol	99.4	103	106		2.21
	2,6-Dichlorophenol	126	127	124		3.25
	2,6-Dinitrotoluene	124	129	122		6.19
	3-Methylcholanthrene	122	116	120		2.11
	3,3'-Dichlorobenzidine	90.4	28.8	21.9		28.0
	4-Aminobiphenyl	118	49.6	46.9		6.53
	4-Bromophenyl phenyl ether	128	126	127		0.465
	4-Chloro-3-methylphenol	119	117	117		0.854
	4-Chlorophenyl phenyl ether	119	118	120		0.738
	4-Nitrophenol	82.6	82.1	84.4		1.82
	5-Nitro-o-toluidine	97.0	90.7	95.1		3.80
	7,12-Dimethylbenz(a)anthracene	129	109	113		1.94
	Acenaphthene	119	117	116		2.23
	Acenaphthylene	115	113	114		0.322
	Acetophenone	122	121	116		4.56
	Aniline	120	116	105		10.5
	Anthracene	127	121	120		2.02
	Azobenzene/1,2-Diphenylhydrazine	115	110	107		3.34
	Benzidine	138	0.0	0.0		
	Benzo(a)anthracene	126	117	117		0.341
	Benzo(a)pyrene	128	120	121		0.194
	Benzo(b)fluoranthene	118	115	114		1.73
	Benzo(g,h,i)perylene	128	127	126		1.89
	Benzo(k)fluoranthene	125	129	119		8.90
	Benzyl alcohol	104	99.3	92.6		7.92
	Bis(2-chloroethoxy)methane	118	116	111		5.68
	Bis(2-chloroethyl)ether	120	119	110		9.07
	Bis(2-chloroisopropyl)ether	88.7	86.6	80.1		8.74
	Bis(2-ethylhexyl)phthalate	151	141	135		4.78
	Butyl benzyl phthalate	140	128	127		2.43
	Carbazole	116	119	121		0.896
	Chrysene	127	123	122		1.59
	Di-n-butyl phthalate	117	110	111		0.305
	Di-n-octyl phthalate	126	120	119		1.78
	Dibenzo(a,h)anthracene	125	129	128		1.33
Dibenzofuran	115	113	114		0.116	
Diethyl phthalate	115	114	116		0.626	
Dimethyl phthalate	122	123	124		0.599	
Dimethylaminoazobenzene	127	121	125		2.07	
Dinoseb	135	135	138		1.04	
Ethyl methanesulfonate	121	119	114		5.84	
Fluoranthene	126	123	123		1.10	
Fluorene	108	106	107		0.283	
Hexachlorobenzene	129	127	127		1.18	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision		
							SMP	MS	
EPA 8270E	Hexachlorobutadiene	122		116	110			5.36	
	Hexachlorocyclopentadiene	116		97.0	97.7			0.220	
	Hexachloroethane	117		112	105			7.40	
	Hexachloropropene	118		111	103			8.12	
	Indeno(1,2,3-cd)pyrene	125		127	128			0.314	
	Isophorone	118		115	109			6.65	
	Isosafrole	125		128	124			3.40	
	m,p-Cresols	85.9		103	82.4			23.1	
	N-Nitrosodi-n-butylamine	127		125	122			3.77	
	N-Nitrosodi-n-propylamine	112		112	104			8.60	
	N-Nitrosodiethylamine	122		122	117			5.37	
	N-Nitrosodimethylamine	61.2		57.7	54.3			7.01	
	N-Nitrosodiphenylamine/ Diphenylamine	154		154	156				
	N-Nitrosomethylethylamine	116		111	110			1.03	
	N-Nitrosomorpholine	107		104	99.8			5.25	
	N-Nitrosopiperidine	125		123	120			3.91	
	N-Nitrosopyrrolidine	121		120	114			6.16	
	Naphthalene	121		141	135			5.21	
	Nitrobenzene	112		114	109			6.05	
	o-Cresol	100		97.0	90.9			7.43	
	o-Toluidine	123		118	112			6.15	
	Pentachlorobenzene	123		125	127			0.492	
	Pentachloroethane	117		114	109			5.42	
	Pentachloronitrobenzene	129		133	135			0.855	
	Pentachlorophenol	120		127	129			0.311	
	Phenacetin	118		114	119			2.67	
	Phenanthrene	127		120	120			1.02	
	Phenol	63.7		56.1	51.8			8.91	
	Pyrene	121		111	110			2.12	
	Pyridine	66.8		67.6	57.3			17.4	
	Safrole	129		128	124			3.56	
	EPA 8321B	4:2 Fluorotelomer sulfonate (4:2 FTS)	130	135			4.45		
		4:2 Fluorotelomer sulfonate (4:2 FTS)	107		119	134			11.7
6:2 Fluorotelomer sulfonate (6:2 FTS)		113	150			28.0			
6:2 Fluorotelomer sulfonate (6:2 FTS)		130		189	264			33.2	
8:2 Fluorotelomer sulfonate (8:2 FTS)		154	156			1.60			
8:2 Fluorotelomer sulfonate (8:2 FTS)		137		132	112			16.7	
N-Et perfluorooctanesulfonamidoAc acid		74.9	83.3			10.6			
N-Et perfluorooctanesulfonamidoAc acid		84.9		85.8	113			27.3	
N-Me perfluorooctanesulfonamidoAc acid		102	119			15.8			
N-Me perfluorooctanesulfonamidoAc acid		107		115	126			9.25	
Perfluorobutanesulfonic acid (PFBS)		110	114			3.17			
Perfluorobutanesulfonic acid (PFBS)		117						23.8	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision	
							SMP	MS
EPA 8321B	Perfluorodecanesulfonic acid (PFDS)	70.1	89.4			24.3		
	Perfluorodecanesulfonic acid (PFDS)	96.1		90.2	107			17.2
	Perfluorodecanoic acid (PFDA)	94.9	128			29.4		
	Perfluorodecanoic acid (PFDA)	102		75.8	85.7			11.3
	Perfluorododecanoic acid (PFDoA)	60.4	67.0			10.4		
	Perfluorododecanoic acid (PFDoA)	81.6		87.2	103			17.1
	Perfluoroheptanesulfonic acid (PFHpS)	100	115			13.9		
	Perfluoroheptanesulfonic acid (PFHpS)	91.4		78.3	72.6			6.51
	Perfluoroheptanoic acid (PFHpA)	75.6	114			40.5		
	Perfluoroheptanoic acid (PFHpA)	66.3						26.5
	Perfluorohexanesulfonic acid (PFHxS)	77.2	87.1			12.0		
	Perfluorohexanesulfonic acid (PFHxS)	128						2.59
	Perfluorohexanoic acid (PFHxA)	78.4	96.1			20.3		
	Perfluorohexanoic acid (PFHxA)	92.9						0.719
	Perfluorononanesulfonic acid (PFNS)	69.1	78.6			12.9		
	Perfluorononanesulfonic acid (PFNS)	72.1		62.9	78.7			22.3
	Perfluorononanoic acid (PFNA)	111	100			9.50		
	Perfluorononanoic acid (PFNA)	145		102	123			15.0
	Perfluorooctanesulfonic acid (PFOS)	71.1	82.8			15.2		
	Perfluorooctanesulfonic acid (PFOS)	82.6						26.7
	Perfluorooctanoic acid (PFOA)	103	109			5.45		
	Perfluorooctanoic acid (PFOA)	83.0						11.3
	Perfluoropentanesulfonic acid (PFPeS)	107	114			6.78		
	Perfluoropentanesulfonic acid (PFPeS)	83.7		79.5	129			29.2
	Perfluoropentanoic acid (PFPeA)	81.7	96.0			16.0		
	Perfluoropentanoic acid (PFPeA)	106						6.20
	Perfluorotetradecanoic acid (PFTeA)	48.4	51.3			5.90		
	Perfluorotetradecanoic acid (PFTeA)	61.0		77.9	86.3			10.2
	Perfluorotridecanoic acid (PFTriA)	50.1	81.5			47.7		
	Perfluorotridecanoic acid (PFTriA)	60.6		71.6	76.9			7.08
Perfluoroundecanoic acid (PFUnA)	109	117			6.73			
Perfluoroundecanoic acid (PFUnA)	56.7		66.2	84.4			24.3	

Reference Method Descriptions

Method	Description	Associated Samples
EPA 6020A	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting RCRA Projects	2162827
EPA 7473	Mercury in aqueous samples using thermal decomposition, amalgamation, and AA spectroscopy.	2162826
EPA 8260D	Volatile organic pollutants in acid preserved water matrices using GC/MS	2162845, 2162846
EPA 8270E	EPA Method 8270, Semi-volatile organic pollutants including PAHs, excluding PCBs and Toxaphene, in water matrices by GC/MS.	2162825

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 8321B	Perfluorinated alkyl substances in water matrices by HPLC/MS/MS	2162828, 2162829, 2162830, 2162831, 2162832, 2162833, 2162834, 2162835, 2162836, 2162837, 2162838, 2162839, 2162840, 2162841, 2162842, 2162843, 2162844

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 6020A	03/06/2020	03/10/2020 14:40	Elliott D. Healy	03/11/2020 15:34	Alexander Thompson	2162827
EPA 7473	03/06/2020			03/19/2020 12:32	Vijayalakshmi Reddy	2162826
EPA 8260D	03/06/2020	03/11/2020 11:45	Yi Lin Luo	03/11/2020 21:16	Yi Lin Luo	2162846
	03/06/2020	03/11/2020 11:45	Yi Lin Luo	03/11/2020 21:43	Yi Lin Luo	2162845
EPA 8270E	03/06/2020	03/11/2020 09:00	Hoor Shaik	03/12/2020 10:51	Mohammad Ghaffari	2162825
	03/06/2020	03/11/2020 09:00	Hoor Shaik	03/12/2020 12:17	Mohammad Ghaffari	2162825
EPA 8321B	03/06/2020	03/10/2020 10:00	Hoor Shaik	03/11/2020 00:39	Pramila Ghimire	2162830
	03/06/2020	03/10/2020 10:00	Hoor Shaik	03/11/2020 00:58	Pramila Ghimire	2162831
	03/06/2020	03/10/2020 10:00	Hoor Shaik	03/11/2020 01:37	Pramila Ghimire	2162832
	03/06/2020	03/10/2020 10:00	Hoor Shaik	03/11/2020 01:57	Pramila Ghimire	2162833
	03/06/2020	03/10/2020 10:00	Hoor Shaik	03/11/2020 02:16	Pramila Ghimire	2162834
	03/06/2020	03/10/2020 10:00	Hoor Shaik	03/11/2020 02:36	Pramila Ghimire	2162835
	03/06/2020	03/10/2020 10:00	Hoor Shaik	03/11/2020 02:55	Pramila Ghimire	2162836
	03/06/2020	03/10/2020 10:00	Hoor Shaik	03/11/2020 03:15	Pramila Ghimire	2162837
	03/06/2020	03/10/2020 10:00	Hoor Shaik	03/11/2020 03:35	Pramila Ghimire	2162838
	03/06/2020	03/10/2020 10:00	Hoor Shaik	03/11/2020 04:33	Pramila Ghimire	2162839
	03/06/2020	03/10/2020 10:00	Hoor Shaik	03/11/2020 04:53	Pramila Ghimire	2162840
	03/06/2020	03/10/2020 10:00	Hoor Shaik	03/11/2020 05:12	Pramila Ghimire	2162841
	03/06/2020	03/10/2020 10:00	Hoor Shaik	03/11/2020 05:32	Pramila Ghimire	2162842
	03/06/2020	03/10/2020 10:00	Hoor Shaik	03/11/2020 05:51	Pramila Ghimire	2162843
	03/06/2020	03/10/2020 10:00	Hoor Shaik	03/11/2020 06:11	Pramila Ghimire	2162844
	03/06/2020	03/10/2020 10:00	Hoor Shaik	03/17/2020 17:20	Pramila Ghimire	2162831
	03/06/2020	03/10/2020 10:00	Hoor Shaik	03/17/2020 17:59	Pramila Ghimire	2162834
	03/06/2020	03/10/2020 10:00	Hoor Shaik	03/17/2020 18:19	Pramila Ghimire	2162837
	03/06/2020	03/10/2020 10:00	Hoor Shaik	03/17/2020 18:39	Pramila Ghimire	2162844
	03/06/2020	03/23/2020 12:00	Pramila Ghimire	03/23/2020 17:59	Pramila Ghimire	2162828
03/06/2020	03/23/2020 12:00	Pramila Ghimire	03/23/2020 18:19	Pramila Ghimire	2162829	

Chemical Analysis Report

SIS-2020-03-02-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

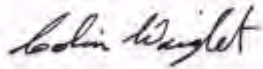
Event Description: **Palm Beach State College (Water)**
Request ID: **RQ-2020-02-24-06**
Customer: **SIS**
Project ID: **SIS-PFAS**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Road
Twin Towers Bldg. MS# 4515
Tallahassee, FL 32399
Attn: Jeff Newton

For additional information please contact
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Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 27-MAR-2020 13:06



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Palm Beach State College (PBSC)

Collection Date/Time: 02/25/2020 16:45

Field ID: EQB-6

Matrix: W-EQPMT-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2161224	EPA 8321B	Perfluorooctanoic acid (PFOA)**	1.0	U	ng/L	P379764	
		Perfluorooctanesulfonic acid (PFOS)**	2.0	U	ng/L	P379764	
		Perfluorobutanesulfonic acid (PFBS)**	0.40	U	ng/L	P379764	
		Perfluorodecanoic acid (PFDA)**	1.0	U	ng/L	P379764	RPD
		Perfluorododecanoic acid (PFDoA)**	1.0	U	ng/L	P379764	
		Perfluoroheptanoic acid (PFHpA)**	2.0	U	ng/L	P379764	
		Perfluorohexanesulfonic acid (PFHxS)**	0.40	U	ng/L	P379764	
		Perfluorohexanoic acid (PFHxA)**	2.0	U	ng/L	P379764	
		Perfluorononanoic acid (PFNA)**	1.0	U	ng/L	P379764	
		Perfluorotetradecanoic acid (PFTeA)**	0.40	U	ng/L	P379764	
		Perfluorotridecanoic acid (PFTriA)**	3.4		ng/L	P379764	
		Perfluoroundecanoic acid (PFUnA)**	1.0	U	ng/L	P379764	
		N-Me perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P379764	
		N-Et perfluorooctanesulfonamidoAcid**	0.40	U	ng/L	P379764	
		Perfluoropentanoic acid (PFPeA)**	4.0	U	ng/L	P379764	
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	2.0	UJ	ng/L	P379764	LCS, MS
		Perfluoropentanesulfonic acid (PFPeS)**	0.40	U	ng/L	P379764	
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	4.0	U	ng/L	P379764	MS
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	2.0	U	ng/L	P379764	MS
		Perfluoroheptanesulfonic acid (PFHpS)**	0.40	U	ng/L	P379764	
		Perfluorononanesulfonic acid (PFNS)**	0.40	U	ng/L	P379764	
		Perfluorodecanesulfonic acid (PFDS)**	0.40	U	ng/L	P379764	

Ref. Method and Comment:

EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P379764

Component	Result	Code	Units
4:2 Fluorotelomer sulfonate (4:2 FTS)	2.0	U	ng/L
6:2 Fluorotelomer sulfonate (6:2 FTS)	4.0	U	ng/L
8:2 Fluorotelomer sulfonate (8:2 FTS)	2.0	U	ng/L
N-Et perfluorooctanesulfonamidoAc acid	0.40	U	ng/L
N-Me perfluorooctanesulfonamidoAc acid	0.40	U	ng/L
Perfluorobutanesulfonic acid (PFBS)	0.40	U	ng/L
Perfluorodecanesulfonic acid (PFDS)	0.40	U	ng/L
Perfluorodecanoic acid (PFDA)	1.0	U	ng/L
Perfluorododecanoic acid (PFDoA)	1.0	U	ng/L
Perfluoroheptanesulfonic acid (PFHpS)	0.40	U	ng/L
Perfluoroheptanoic acid (PFHpA)	2.0	U	ng/L
Perfluorohexanesulfonic acid (PFHxS)	0.40	U	ng/L
Perfluorohexanoic acid (PFHxA)	2.0	U	ng/L
Perfluorononanesulfonic acid (PFNS)	0.40	U	ng/L
Perfluorononanoic acid (PFNA)	1.0	U	ng/L
Perfluorooctanesulfonic acid (PFOS)	2.0	U	ng/L
Perfluorooctanoic acid (PFOA)	1.0	U	ng/L
Perfluoropentanesulfonic acid (PFPeS)	0.40	U	ng/L
Perfluoropentanoic acid (PFPeA)	4.0	U	ng/L
Perfluorotetradecanoic acid (PFTeA)	0.40	U	ng/L
Perfluorotridecanoic acid (PFTriA)	0.40	U	ng/L
Perfluoroundecanoic acid (PFUnA)	1.0	U	ng/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P379764

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	164		F	30 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	154		P	30 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	139		P	30 - 160
N-Et perfluorooctanesulfonamidoAc acid	75.2		P	30 - 160
N-Me perfluorooctanesulfonamidoAc acid	108		P	30 - 160
Perfluorobutanesulfonic acid (PFBS)	132		P	30 - 160
Perfluorodecanesulfonic acid (PFDS)	89.4		P	30 - 160
Perfluorodecanoic acid (PFDA)	126		P	30 - 160
Perfluorododecanoic acid (PFDoA)	136		P	30 - 160
Perfluoroheptanesulfonic acid (PFHpS)	107		P	30 - 160
Perfluoroheptanoic acid (PFHpA)	112		P	30 - 160
Perfluorohexanesulfonic acid (PFHxS)	127		P	30 - 160
Perfluorohexanoic acid (PFHxA)	114		P	30 - 160
Perfluorononanesulfonic acid (PFNS)	119		P	30 - 160
Perfluorononanoic acid (PFNA)	126		P	30 - 160
Perfluorooctanesulfonic acid (PFOS)	116		P	30 - 160
Perfluorooctanoic acid (PFOA)	150		P	30 - 160
Perfluoropentanesulfonic acid (PFPeS)	120		P	30 - 160
Perfluoropentanoic acid (PFPeA)	131		P	30 - 160
Perfluorotetradecanoic acid (PFTeA)	124		P	30 - 160
Perfluorotridecanoic acid (PFTriA)	93.7		P	30 - 160
Perfluoroundecanoic acid (PFUnA)	91.1		P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P379764

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160872	4:2 Fluorotelomer sulfonate (4:2 FTS)	167	177	F/F	30 - 160
2160872	6:2 Fluorotelomer sulfonate (6:2 FTS)	181	150	F/P	30 - 160
2160872	8:2 Fluorotelomer sulfonate (8:2 FTS)	165	132	F/P	30 - 160
2160872	N-Et perfluorooctanesulfonamidoAc acid	112	89.7	P/P	30 - 160
2160872	N-Me perfluorooctanesulfonamidoAc acid	117	108	P/P	30 - 160
2160872	Perfluorobutanesulfonic acid (PFBS)	102	118	P/P	30 - 160
2160872	Perfluorodecanesulfonic acid (PFDS)	91.5	75.1	P/P	30 - 160
2160872	Perfluorodecanoic acid (PFDA)	136	97.8	P/P	30 - 160
2160872	Perfluorododecanoic acid (PFDoA)	102	77.6	P/P	30 - 160
2160872	Perfluoroheptanesulfonic acid (PFHpS)	126	97.7	P/P	30 - 160
2160872	Perfluoroheptanoic acid (PFHpA)	113	151	P/P	30 - 160
2160872	Perfluorohexanesulfonic acid (PFHxS)	133	96.8	P/P	30 - 160
2160872	Perfluorohexanoic acid (PFHxA)	124	108	P/P	30 - 160
2160872	Perfluorononanesulfonic acid (PFNS)	126	102	P/P	30 - 160
2160872	Perfluorononanoic acid (PFNA)	76.2	95.7	P/P	30 - 160
2160872	Perfluorooctanesulfonic acid (PFOS)	116	62.8	P/P	30 - 160
2160872	Perfluorooctanoic acid (PFOA)	92.0	134	P/P	30 - 160
2160872	Perfluoropentanesulfonic acid (PFPeS)	151	115	P/P	30 - 160
2160872	Perfluoropentanoic acid (PFPeA)	137	120	P/P	30 - 160
2160872	Perfluorotetradecanoic acid (PFTeA)	95.6	81.6	P/P	30 - 160
2160872	Perfluorotridecanoic acid (PFTriA)	52.3	51.7	P/P	30 - 160
2160872	Perfluoroundecanoic acid (PFUnA)	83.8	99.5	P/P	30 - 160

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P379764

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160872	4:2 Fluorotelomer sulfonate (4:2 FTS)	6.06	Spike	P	0 - 30
2160872	6:2 Fluorotelomer sulfonate (6:2 FTS)	18.7	Spike	P	0 - 30
2160872	8:2 Fluorotelomer sulfonate (8:2 FTS)	22.4	Spike	P	0 - 30
2160872	N-Et perfluorooctanesulfonamidoAc acid	21.8	Spike	P	0 - 30
2160872	N-Me perfluorooctanesulfonamidoAc acid	8.20	Spike	P	0 - 30
2160872	Perfluorobutanesulfonic acid (PFBS)	7.23	Spike	P	0 - 30
2160872	Perfluorodecanesulfonic acid (PFDS)	19.7	Spike	P	0 - 30
2160872	Perfluorodecanoic acid (PFDA)	32.6	Spike	F	0 - 30
2160872	Perfluorododecanoic acid (PFDoA)	27.2	Spike	P	0 - 30
2160872	Perfluoroheptanesulfonic acid (PFHpS)	24.1	Spike	P	0 - 30
2160872	Perfluoroheptanoic acid (PFHpA)	24.7	Spike	P	0 - 30
2160872	Perfluorohexanesulfonic acid (PFHxS)	15.1	Spike	P	0 - 30
2160872	Perfluorohexanoic acid (PFHxA)	11.0	Spike	P	0 - 30
2160872	Perfluorononanesulfonic acid (PFNS)	20.5	Spike	P	0 - 30
2160872	Perfluorononanoic acid (PFNA)	21.0	Spike	P	0 - 30
2160872	Perfluorooctanesulfonic acid (PFOS)	17.7	Spike	P	0 - 30
2160872	Perfluorooctanoic acid (PFOA)	27.9	Spike	P	0 - 30
2160872	Perfluoropentanesulfonic acid (PFPeS)	24.0	Spike	P	0 - 30
2160872	Perfluoropentanoic acid (PFPeA)	9.88	Spike	P	0 - 30
2160872	Perfluorotetradecanoic acid (PFTeA)	15.8	Spike	P	0 - 30
2160872	Perfluorotridecanoic acid (PFTriA)	0.771	Spike	P	0 - 30
2160872	Perfluoroundecanoic acid (PFUnA)	17.1	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2161224
Field Sample ID: EQB-6

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Perfluorobutanesulfonate-13C	132	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	139	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	124	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	93.3	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A98097
 Included Lab Sample IDs: 2161224

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	146	109	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	120	108	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	111	95.1	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	105	80.5	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	109	101	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	117	107	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	110	88.9	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	110	87.6	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	107	130	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	100	86.2	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	95.4	105	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	113	103	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	76.0	116	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	124	119	P/P	60 - 160
Perfluorononanoic acid (PFNA)	89.1	91.7	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	107	89.3	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	77.2	118	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	109	113	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	88.0	114	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	110	137	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	104	114	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	81.5	116	P/P	60 - 160

* Pass/Fail determinations are made for each bracketing calibration verification check.
 Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
 Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS	SMP		
EPA 8321B	4:2 Fluorotelomer sulfonate (4:2 FTS)	164	167	177		6.06
	6:2 Fluorotelomer sulfonate (6:2 FTS)	154	181	150		18.7
	8:2 Fluorotelomer sulfonate (8:2 FTS)	139	165	132		22.4
	N-Et perfluorooctanesulfonamidoAc acid	75.2	112	89.7		21.8
	N-Me perfluorooctanesulfonamidoAc acid	108	117	108		8.20
	Perfluorobutanesulfonic acid (PFBS)	132	102	118		7.23
	Perfluorodecanesulfonic acid (PFDS)	89.4	91.5	75.1		19.7
	Perfluorodecanoic acid (PFDA)	126	136	97.8		32.6
	Perfluorododecanoic acid (PFDoA)	136	102	77.6		27.2
	Perfluoroheptanesulfonic acid (PFHpS)	107	126	97.7		24.1
	Perfluoroheptanoic acid (PFHpA)	112	113	151		24.7
	Perfluorohexanesulfonic acid (PFHxS)	127	133	96.8		15.1
	Perfluorohexanoic acid (PFHxA)	114	124	108		11.0
	Perfluorononanesulfonic acid (PFNS)	119	126	102		20.5
	Perfluorononanoic acid (PFNA)	126	76.2	95.7		21.0
	Perfluorooctanesulfonic acid (PFOS)	116	116	62.8		17.7
	Perfluorooctanoic acid (PFOA)	150	92.0	134		27.9
	Perfluoropentanesulfonic acid (PFPeS)	120	151	115		24.0
	Perfluoropentanoic acid (PFPeA)	131	137	120		9.88
	Perfluorotetradecanoic acid (PFTeA)	124	95.6	81.6		15.8
	Perfluorotridecanoic acid (PFTriA)	93.7	52.3	51.7		0.771
	Perfluoroundecanoic acid (PFUnA)	91.1	83.8	99.5		17.1

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Perfluorinated alkyl substances in water matrices by HPLC/MS/MS	2161224

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	03/02/2020	03/06/2020 12:00	Pramila Ghimire	03/10/2020 00:52	Pramila Ghimire	2161224

Chemical Analysis Report

SIS-2020-02-07-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

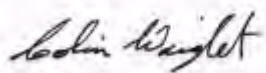
Event Description: **Palm Beach State College IDW**
Request ID: **RQ-2020-02-03-48**
Customer: **SIS**
Project ID: **SIS-PFAS**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Road
Twin Towers Bldg. MS# 4515
Tallahassee, FL 32399
Attn: Jeff Newton

For additional information please contact
Colin Wright, Ph.D.
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Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 25-FEB-2020 15:56



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals, Pesticides and Priority Organic Pollutants.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Palm Beach State College

Collection Date/Time: 02/06/2020 09:00

Field ID: Water Drum Sample

Matrix: WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155787	EPA 8270E	Acenaphthene	0.26	U	ug/L	P378646	
		Acenaphthylene	0.26	U	ug/L	P378646	
		Acetophenone	2.1	U	ug/L	P378646	
		2-Acetylaminofluorene	1.0	U	ug/L	P378646	
		4-Aminobiphenyl	4.2	U	ug/L	P378646	
		Aniline	1.0	U	ug/L	P378646	
		Anthracene	0.52	U	ug/L	P378646	
		Azobenzene/1,2-Diphenylhydrazine**	0.52	U	ug/L	P378646	
		Benzidine	10	UJ	ug/L	P378646	CCV
		Benzo(a)anthracene	0.26	U	ug/L	P378646	
		Benzo(a)pyrene	0.26	U	ug/L	P378646	
		Benzo(b)fluoranthene	0.26	U	ug/L	P378646	
		Benzo(k)fluoranthene	0.26	U	ug/L	P378646	
		Benzo(g,h,i)perylene	0.26	U	ug/L	P378646	
		Benzyl alcohol	1.0	U	ug/L	P378646	
		Bis(2-chloroethoxy)methane	0.52	U	ug/L	P378646	
		Bis(2-chloroethyl)ether	0.52	U	ug/L	P378646	
		Bis(2-chloroisopropyl)ether	0.52	U	ug/L	P378646	
		Bis(2-ethylhexyl)phthalate	5.2	U	ug/L	P378646	
		Butyl benzyl phthalate	1.0	U	ug/L	P378646	
		4-Bromophenyl phenyl ether	0.52	U	ug/L	P378646	
		2-Chloronaphthalene	0.52	U	ug/L	P378646	
		4-Chlorophenyl phenyl ether	0.52	U	ug/L	P378646	
		Carbazole	0.52	U	ug/L	P378646	
		Chrysene	0.26	U	ug/L	P378646	
		m,p-Cresols	0.52	U	ug/L	P378646	
		o-Cresol	0.52	U	ug/L	P378646	
		Di-n-butyl phthalate	2.1	U	ug/L	P378646	
		Di-n-octyl phthalate	0.52	U	ug/L	P378646	
		Dibenzo(a,h)anthracene	0.26	U	ug/L	P378646	
		Dibenzofuran	0.52	U	ug/L	P378646	
		3,3'-Dichlorobenzidine	10	U	ug/L	P378646	
		Diethyl phthalate	2.1	U	ug/L	P378646	
		Dimethyl phthalate	0.52	U	ug/L	P378646	
		Dimethylaminoazobenzene	0.52	U	ug/L	P378646	
		7,12-Dimethylbenz(a)anthracene	1.0	U	ug/L	P378646	
		1,3-Dinitrobenzene	1.0	U	ug/L	P378646	
		2,4-Dinitrotoluene	0.52	U	ug/L	P378646	
		2,6-Dinitrotoluene	0.52	U	ug/L	P378646	
		Dinoseb**	4.2	U	ug/L	P378646	MS
		Ethyl methanesulfonate	1.0	U	ug/L	P378646	
		Fluoranthene	0.52	U	ug/L	P378646	
		Fluorene	0.26	U	ug/L	P378646	
		Hexachlorobenzene	0.52	U	ug/L	P378646	

Field ID: Water Drum Sample

Matrix: WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155787	EPA 8270E	Hexachlorobutadiene	0.52	U	ug/L	P378646	
		Hexachlorocyclopentadiene	0.52	U	ug/L	P378646	
		Hexachloroethane	0.52	U	ug/L	P378646	
		Hexachloropropene	0.52	U	ug/L	P378646	
		Indeno(1,2,3-cd)pyrene	0.26	U	ug/L	P378646	
		Isophorone	0.52	U	ug/L	P378646	
		Isosafrole	0.52	U	ug/L	P378646	
		3-Methylcholanthrene	1.0	U	ug/L	P378646	
		2-Methylnaphthalene	1.0	U	ug/L	P378646	
		Naphthalene	1.0	U	ug/L	P378646	
		1-Naphthylamine	10	UJ	ug/L	P378646	LCS
		2-Naphthylamine	10	UJ	ug/L	P378646	LCS
		2-Nitroaniline	0.52	U	ug/L	P378646	
		Nitrobenzene	0.52	U	ug/L	P378646	
		5-Nitro-o-toluidine	1.0	U	ug/L	P378646	
		N-Nitrosodi-n-butylamine	0.52	U	ug/L	P378646	
		N-Nitrosodiethylamine	1.0	U	ug/L	P378646	
		N-Nitrosodimethylamine	2.1	U	ug/L	P378646	
		N-Nitrosodi-n-propylamine	0.52	U	ug/L	P378646	
		N-Nitrosomethylethylamine	2.1	U	ug/L	P378646	
		N-Nitrosomorpholine	0.52	U	ug/L	P378646	
		N-Nitrosopiperidine	0.52	U	ug/L	P378646	
		N-Nitrosopyrrolidine	0.52	U	ug/L	P378646	
		Pentachlorobenzene	0.52	U	ug/L	P378646	
		Pentachloroethane**	0.52	U	ug/L	P378646	
		Pentachloronitrobenzene	0.52	U	ug/L	P378646	
		Phenacetin	1.0	U	ug/L	P378646	
		Phenanthrene	1.0	U	ug/L	P378646	
		2-Picoline	1.0	U	ug/L	P378646	
		Pyrene	1.0	U	ug/L	P378646	
		Pyridine	4.2	U	ug/L	P378646	
		Safrole	0.52	U	ug/L	P378646	
		1,2,4,5-Tetrachlorobenzene	0.52	U	ug/L	P378646	
		o-Toluidine	1.0	U	ug/L	P378646	
		1,2,4-Trichlorobenzene	0.52	U	ug/L	P378646	
		1,3,5-Trinitrobenzene	1.0	U	ug/L	P378646	
		4-Chloro-3-methylphenol	0.52	U	ug/L	P378646	
		2-Chlorophenol	0.52	U	ug/L	P378646	
		2,4-Dichlorophenol	0.52	U	ug/L	P378646	
		2,6-Dichlorophenol	0.52	U	ug/L	P378646	
		2,4-Dimethylphenol	0.52	U	ug/L	P378646	
		2,4-Dinitrophenol	10	U	ug/L	P378646	
		2-Methyl-4,6-dinitrophenol	3.1	U	ug/L	P378646	MS
		2-Nitrophenol	0.52	U	ug/L	P378646	
		4-Nitrophenol	10	U	ug/L	P378646	

Field ID: Water Drum Sample

Matrix: WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155787	EPA 8270E	Pentachlorophenol	0.52	U	ug/L	P378646	
		Phenol	0.52	U	ug/L	P378646	
		2,3,4,6-Tetrachlorophenol	1.0	U	ug/L	P378646	MS
		2,4,5-Trichlorophenol	0.52	U	ug/L	P378646	
		2,4,6-Trichlorophenol	0.52	U	ug/L	P378646	
		1-Methylnaphthalene	1.0	U	ug/L	P378646	
2155788	EPA 7473	Mercury**	0.12	I	ug/L	P379133	
2155789	EPA 6020A	Arsenic	3.93		ug/L	P378666	
		Barium	19.3		ug/L	P378666	
		Cadmium	0.255		ug/L	P378666	
		Chromium	25.8		ug/L	P378666	
		Lead	21.2		ug/L	P378666	
		Selenium	0.88		ug/L	P378666	
		Silver	0.071		ug/L	P378666	
		2155790	EPA 8321B	Perfluorooctanoic acid (PFOA)**	12	I	ng/L
Perfluorooctanesulfonic acid (PFOS)**	70				ng/L	P378552	
Perfluorobutanesulfonic acid (PFBS)**	2.0			U	ng/L	P378552	
Perfluorodecanoic acid (PFDA)**	5.0			U	ng/L	P378552	RPD
Perfluorododecanoic acid (PFDoA)**	5.0			U	ng/L	P378552	RPD
Perfluoroheptanoic acid (PFHpA)**	12			I	ng/L	P378552	
Perfluorohexanesulfonic acid (PFHxS)**	8.9				ng/L	P378552	RPD
Perfluorohexanoic acid (PFHxA)**	10			U	ng/L	P378552	
Perfluorononanoic acid (PFNA)**	5.0			U	ng/L	P378552	
Perfluorotetradecanoic acid (PFTeA)**	2.0			U	ng/L	P378552	
Perfluorotridecanoic acid (PFTriA)**	2.0			U	ng/L	P378552	
Perfluoroundecanoic acid (PFUnA)**	5.0			U	ng/L	P378552	
N-Me perfluorooctanesulfonamidoAc acid**	2.0			U	ng/L	P378552	
N-Et perfluorooctanesulfonamidoAc acid**	2.0			U	ng/L	P378552	
Perfluoropentanoic acid (PFPeA)**	20			U	ng/L	P378552	
4:2 Fluorotelomer sulfonate (4:2 FTS)**	10			U	ng/L	P378552	
Perfluoropentanesulfonic acid (PFPeS)**	2.0			U	ng/L	P378552	
6:2 Fluorotelomer sulfonate (6:2 FTS)**	170				ng/L	P378552	
8:2 Fluorotelomer sulfonate (8:2 FTS)**	52				ng/L	P378552	
Perfluoroheptanesulfonic acid (PFHpS)**	2.0			U	ng/L	P378552	
Perfluorononanesulfonic acid (PFNS)**	2.0			U	ng/L	P378552	RPD
Perfluorodecanesulfonic acid (PFDS)**	2.0	U	ng/L	P378552	RPD		
Hexafluoropropylene oxide dimer acid**	5.0	U	ng/L	P378552	RPD		
2155791	EPA 8260D	Benzene	100	U	ug/L	P378991	
		Bromodichloromethane	100	U	ug/L	P378991	
		Bromoform	250	U	ug/L	P378991	
		Bromomethane	250	U	ug/L	P378991	
		2-Butanone	1.5E+03	U	ug/L	P378991	
		Carbon tetrachloride	100	U	ug/L	P378991	

Field ID: Water Drum Sample

Matrix: WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155791	EPA 8260D	Chlorobenzene	100	U	ug/L	P378991	
		Chloroethane	250	U	ug/L	P378991	
		Chloroform	100	U	ug/L	P378991	
		Chloromethane	250	U	ug/L	P378991	
		Dibromochloromethane	100	U	ug/L	P378991	
		1,2-Dichlorobenzene	250	U	ug/L	P378991	
		1,3-Dichlorobenzene	250	U	ug/L	P378991	
		1,4-Dichlorobenzene	250	U	ug/L	P378991	
		1,1-Dichloroethane	100	U	ug/L	P378991	
		1,2-Dichloroethane	100	U	ug/L	P378991	
		1,1-Dichloroethene	100	U	ug/L	P378991	
		cis-1,2-Dichloroethene	100	U	ug/L	P378991	
		trans-1,2-Dichloroethene	100	U	ug/L	P378991	
		1,2-Dichloropropane	100	U	ug/L	P378991	
		cis-1,3-Dichloropropene	250	U	ug/L	P378991	
		trans-1,3-Dichloropropene	250	U	ug/L	P378991	
		Ethylbenzene	100	U	ug/L	P378991	
		Methyl-t-butyl ether	100	U	ug/L	P378991	
		Methylene chloride	500	U	ug/L	P378991	
		1,1,2,2-Tetrachloroethane	100	U	ug/L	P378991	
		Tetrachloroethene	100	U	ug/L	P378991	
		Toluene	250	U	ug/L	P378991	
		1,1,1-Trichloroethane	100	U	ug/L	P378991	
		1,1,2-Trichloroethane	100	U	ug/L	P378991	
		Trichloroethene	100	U	ug/L	P378991	
		Trichlorofluoromethane	100	U	ug/L	P378991	RPD
		Vinyl chloride	100	U	ug/L	P378991	
		o-Xylene	250	U	ug/L	P378991	
		m,p-Xylene	250	U	ug/L	P378991	

Ref. Method and Comment:

EPA 8270E: MDL for some analytes elevated due to matrix interference. Precision for benzidine is not available due to low recoveries in the duplicate matrix spikes. Refer to the Lab Analysis Report for an explanation of QC Codes.

EPA 8321B: MDLs are elevated due to matrix interference.

EPA 8260D: The MDLs are elevated due to required dilution of the sample matrix (foaming).

Sample Location: Palm Beach State College

Collection Date/Time: 02/06/2020 09:20

Field ID: Soil Drum Sample

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155782	EPA 8270E	Acenaphthene	7.2	U	ug/kg	P378094	
		Acenaphthylene	7.2	U	ug/kg	P378094	
		Anthracene	7.2	U	ug/kg	P378094	
		Azobenzene/1,2-Diphenylhydrazine	65	U	ug/kg	P378094	
		Benzydine	1.4E+03	UJ	ug/kg	P378094	CCV, MS
		Benzo(a)anthracene	7.2	U	ug/kg	P378094	
		Benzo(a)pyrene	8.3	I	ug/kg	P378094	
		Benzo(b)fluoranthene	11	I	ug/kg	P378094	
		Benzo(k)fluoranthene	9.7	I	ug/kg	P378094	
		Benzo(g,h,i)perylene	7.2	I	ug/kg	P378094	
		Bis(2-chloroethoxy)methane	65	U	ug/kg	P378094	
		Bis(2-chloroethyl)ether	65	U	ug/kg	P378094	
		Bis(2-chloroisopropyl)ether	65	U	ug/kg	P378094	
		Bis(2-ethylhexyl)phthalate	390	U	ug/kg	P378094	
		Butyl benzyl phthalate	65	U	ug/kg	P378094	
		4-Bromophenyl phenyl ether	65	U	ug/kg	P378094	
		2-Chloronaphthalene	65	U	ug/kg	P378094	
		4-Chlorophenyl phenyl ether	65	U	ug/kg	P378094	
		Chrysene	9.3	I	ug/kg	P378094	
		Di-n-butyl phthalate	390	U	ug/kg	P378094	
		Di-n-octyl phthalate	65	U	ug/kg	P378094	
		Dibenzo(a,h)anthracene	7.2	U	ug/kg	P378094	
		3,3'-Dichlorobenzidine	3.9E+03	U	ug/kg	P378094	
		Diethyl phthalate	65	U	ug/kg	P378094	
		Dimethyl phthalate	65	U	ug/kg	P378094	
		2,4-Dinitrotoluene	65	U	ug/kg	P378094	
		2,6-Dinitrotoluene	65	U	ug/kg	P378094	
		Fluoranthene	13	I	ug/kg	P378094	
		Fluorene	7.2	U	ug/kg	P378094	
		Hexachlorobenzene	65	U	ug/kg	P378094	
		Hexachlorobutadiene	190	U	ug/kg	P378094	
		Hexachlorocyclopentadiene	65	UJ	ug/kg	P378094	MS
		Hexachloroethane	190	U	ug/kg	P378094	
		Indeno(1,2,3-cd)pyrene	7.2	U	ug/kg	P378094	
		Isophorone	65	U	ug/kg	P378094	
		Naphthalene	7.2	U	ug/kg	P378094	
		Nitrobenzene	65	U	ug/kg	P378094	
		N-Nitrosodimethylamine	390	U	ug/kg	P378094	
		N-Nitrosodi-n-propylamine	65	U	ug/kg	P378094	
		Phenanthrene	7.2	U	ug/kg	P378094	
		Pyrene	10	I	ug/kg	P378094	
		1,2,4-Trichlorobenzene	190	U	ug/kg	P378094	
		4-Chloro-3-methylphenol	65	U	ug/kg	P378094	
		2-Chlorophenol	190	U	ug/kg	P378094	

Field ID: Soil Drum Sample

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes		
2155782	EPA 8270E	2,4-Dichlorophenol	65	U	ug/kg	P378094			
		2,4-Dimethylphenol	390	U	ug/kg	P378094			
		2,4-Dinitrophenol	390	U	ug/kg	P378094			
		2-Methyl-4,6-dinitrophenol	65	U	ug/kg	P378094			
		2-Nitrophenol	65	U	ug/kg	P378094			
		4-Nitrophenol	65	U	ug/kg	P378094			
		Pentachlorophenol	65	U	ug/kg	P378094			
		Phenol	65	U	ug/kg	P378094			
		2,4,6-Trichlorophenol	65	U	ug/kg	P378094			
		N-Nitrosodiphenylamine/ Diphenylamine	65	U	ug/kg	P378094			
		2155783	EPA 7473	Mercury	0.0092		mg/Kg	P378957	
		2155784	EPA 6020A	Arsenic	0.480		mg/Kg	P378573	
				Barium	4.66		mg/Kg	P378573	
Cadmium	0.030				mg/Kg	P378573			
Chromium	3.15				mg/Kg	P378573			
Lead	3.35				mg/Kg	P378573			
Selenium	0.16			I	mg/Kg	P378573			
Silver	0.010				mg/Kg	P378573			
2155785	EPA 8321B			Perfluorobutanesulfonic acid (PFBS)**	0.11	U	ug/Kg	P378518	
		Perfluorodecanoic acid (PFDA)**	0.11	U	ug/Kg	P378518	MS		
		Perfluorododecanoic acid (PFDoA)**	0.16	I	ug/Kg	P378518			
		Perfluoroheptanoic acid (PFHpA)**	0.11	U	ug/Kg	P378518			
		Perfluorohexanesulfonic acid (PFHxS)**	0.11	U	ug/Kg	P378518			
		Perfluorohexanoic acid (PFHxA)**	0.11	U	ug/Kg	P378518			
		Perfluorononanoic acid (PFNA)**	0.13	I	ug/Kg	P378518	MS, RPD		
		Perfluorooctanesulfonic acid (PFOS)**	0.29	I	ug/Kg	P378518			
		Perfluorooctanoic acid (PFOA)**	0.11	U	ug/Kg	P378518			
		Perfluorotetradecanoic acid (PFTeA)**	0.11	U	ug/Kg	P378518			
		Perfluorotridecanoic acid (PFTriA)**	0.11	U	ug/Kg	P378518			
		Perfluoroundecanoic acid (PFUnA)**	0.11	U	ug/Kg	P378518	RPD		
		N-Me perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P378518			
		N-Et perfluorooctanesulfonamidoAc acid**	0.11	U	ug/Kg	P378518			
		Perfluoropentanoic acid (PFPeA)**	0.46	U	ug/Kg	P378518			
		4:2 Fluorotelomer sulfonate (4:2 FTS)**	0.23	U	ug/Kg	P378518			
		Perfluoropentanesulfonic acid (PFPeS)**	0.11	U	ug/Kg	P378518			
		6:2 Fluorotelomer sulfonate (6:2 FTS)**	0.46	U	ug/Kg	P378518			
		8:2 Fluorotelomer sulfonate (8:2 FTS)**	0.23	U	ug/Kg	P378518			
		Perfluoroheptanesulfonic acid (PFHpS)**	0.11	U	ug/Kg	P378518			
Perfluorononanesulfonic acid (PFNS)**	0.11	U	ug/Kg	P378518					
Perfluorodecanesulfonic acid (PFDS)**	0.11	U	ug/Kg	P378518					
2155786	EPA 8260D	Benzene	2.0	U	ug/kg	P378838			
		Bromodichloromethane	2.0	U	ug/kg	P378838			

Field ID: Soil Drum Sample

Matrix: S-SOIL

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155786	EPA 8260D	Bromoform	2.0	U	ug/kg	P378838	
		Bromomethane	2.0	U	ug/kg	P378838	
		2-Butanone	9.9	U	ug/kg	P378838	
		Carbon tetrachloride	2.0	U	ug/kg	P378838	
		Chlorobenzene	2.0	U	ug/kg	P378838	
		Chloroethane	2.0	U	ug/kg	P378838	
		Chloroform	2.0	U	ug/kg	P378838	
		Chloromethane	2.0	U	ug/kg	P378838	
		Dibromochloromethane	2.0	U	ug/kg	P378838	
		1,2-Dichlorobenzene	2.0	U	ug/kg	P378838	
		1,3-Dichlorobenzene	2.0	U	ug/kg	P378838	
		1,4-Dichlorobenzene	2.0	U	ug/kg	P378838	
		1,1-Dichloroethane	2.0	U	ug/kg	P378838	
		1,2-Dichloroethane	2.0	U	ug/kg	P378838	
		1,1-Dichloroethene	2.0	U	ug/kg	P378838	
		cis-1,2-Dichloroethene	2.0	U	ug/kg	P378838	
		trans-1,2-Dichloroethene	2.0	U	ug/kg	P378838	
		1,2-Dichloropropane	2.0	U	ug/kg	P378838	
		cis-1,3-Dichloropropene	2.0	U	ug/kg	P378838	
		trans-1,3-Dichloropropene	2.0	U	ug/kg	P378838	
		Ethylbenzene	2.0	U	ug/kg	P378838	
		Methylene chloride	9.9	U	ug/kg	P378838	
		1,1,2,2-Tetrachloroethane	2.0	U	ug/kg	P378838	
		Tetrachloroethene	2.0	U	ug/kg	P378838	
		Toluene	2.0	U	ug/kg	P378838	
		1,1,1-Trichloroethane	2.0	U	ug/kg	P378838	
		1,1,2-Trichloroethane	2.0	U	ug/kg	P378838	
		Trichloroethene	2.0	U	ug/kg	P378838	
		Trichlorofluoromethane	2.0	U	ug/kg	P378838	
		Vinyl chloride	2.0	U	ug/kg	P378838	
		Methyl-t-butyl ether	2.0	U	ug/kg	P378838	
		o-Xylene	2.0	U	ug/kg	P378838	
		m,p-Xylene	2.0	U	ug/kg	P378838	
2155794	SM 2540 G (20th)	% Solid**	91.1		%	P378853	

Ref. Method and Comment:

EPA 8270E: Precision for benzidine is not available due to low recoveries in the duplicate matrix spikes. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Palm Beach State College

Collection Date/Time: 02/06/2020 09:00

Field ID: TRIP BLANK

Matrix: W-TRIP-BLK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155792	EPA 8260D	Benzene	0.20	U	ug/L	P378732	
		Bromodichloromethane	0.20	U	ug/L	P378732	
		Bromoform	0.50	U	ug/L	P378732	
		Bromomethane	0.50	U	ug/L	P378732	
		2-Butanone	3.0	U	ug/L	P378732	
		Carbon tetrachloride	0.20	U	ug/L	P378732	
		Chlorobenzene	0.20	U	ug/L	P378732	
		Chloroethane	0.50	U	ug/L	P378732	
		Chloroform	0.20	U	ug/L	P378732	
		Chloromethane	0.50	U	ug/L	P378732	
		Dibromochloromethane	0.20	U	ug/L	P378732	
		1,2-Dichlorobenzene	0.50	U	ug/L	P378732	
		1,3-Dichlorobenzene	0.50	U	ug/L	P378732	
		1,4-Dichlorobenzene	0.50	U	ug/L	P378732	
		1,1-Dichloroethane	0.20	U	ug/L	P378732	
		1,2-Dichloroethane	0.20	U	ug/L	P378732	
		1,1-Dichloroethene	0.20	U	ug/L	P378732	
		cis-1,2-Dichloroethene	0.20	U	ug/L	P378732	
		trans-1,2-Dichloroethene	0.20	U	ug/L	P378732	
		1,2-Dichloropropane	0.20	U	ug/L	P378732	
		cis-1,3-Dichloropropene	0.50	U	ug/L	P378732	
		trans-1,3-Dichloropropene	0.50	U	ug/L	P378732	
		Ethylbenzene	0.20	U	ug/L	P378732	
		Methyl-t-butyl ether	0.20	U	ug/L	P378732	
		Methylene chloride	1.0	U	ug/L	P378732	
		1,1,2,2-Tetrachloroethane	0.20	U	ug/L	P378732	
		Tetrachloroethene	0.20	U	ug/L	P378732	
		Toluene	0.50	U	ug/L	P378732	
		1,1,1-Trichloroethane	0.20	U	ug/L	P378732	
		1,1,2-Trichloroethane	0.20	U	ug/L	P378732	
		Trichloroethene	0.20	U	ug/L	P378732	
		Trichlorofluoromethane	0.20	U	ug/L	P378732	
		Vinyl chloride	0.20	U	ug/L	P378732	
		o-Xylene	0.50	U	ug/L	P378732	
		m,p-Xylene	0.50	U	ug/L	P378732	

Quality Assurance Report Method Blank Results

Reference Method: EPA 6020A
Batch ID: P378573

Component	Result	Code	Units
Arsenic	0.017	U	mg/Kg
Barium	0.057	U	mg/Kg
Cadmium	0.011	U	mg/Kg
Chromium	0.29	U	mg/Kg
Lead	0.11	U	mg/Kg
Selenium	0.11	U	mg/Kg
Silver	0.0043	U	mg/Kg

Reference Method: EPA 6020A
Batch ID: P378666

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Lead	0.20	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 7473
Batch ID: P378957

Component	Result	Code	Units
Mercury	5.0E-04	U	mg/Kg

Reference Method: EPA 7473
Batch ID: P379133

Component	Result	Code	Units
Mercury	0.10	U	ug/L

Reference Method: EPA 8260D
Batch ID: P378732

Component	Result	Code	Units
1,1-Dichloroethane	0.20	U	ug/L
1,1-Dichloroethene	0.20	U	ug/L
1,1,1-Trichloroethane	0.20	U	ug/L
1,1,2-Trichloroethane	0.20	U	ug/L
1,1,2,2-Tetrachloroethane	0.20	U	ug/L
1,2-Dichlorobenzene	0.50	U	ug/L
1,2-Dichloroethane	0.20	U	ug/L
1,2-Dichloropropane	0.20	U	ug/L
1,3-Dichlorobenzene	0.50	U	ug/L
1,4-Dichlorobenzene	0.50	U	ug/L
2-Butanone	3.0	U	ug/L
Benzene	0.20	U	ug/L
Bromodichloromethane	0.20	U	ug/L
Bromoform	0.50	U	ug/L
Bromomethane	0.50	U	ug/L
Carbon tetrachloride	0.20	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8260D
Batch ID: P378732

Component	Result	Code	Units
Chlorobenzene	0.20	U	ug/L
Chloroethane	0.50	U	ug/L
Chloroform	0.20	U	ug/L
Chloromethane	0.50	U	ug/L
cis-1,2-Dichloroethene	0.20	U	ug/L
cis-1,3-Dichloropropene	0.50	U	ug/L
Dibromochloromethane	0.20	U	ug/L
Ethylbenzene	0.20	U	ug/L
m,p-Xylene	0.50	U	ug/L
Methyl-t-butyl ether	0.20	U	ug/L
Methylene chloride	1.0	U	ug/L
o-Xylene	0.50	U	ug/L
Tetrachloroethene	0.20	U	ug/L
Toluene	0.50	U	ug/L
trans-1,2-Dichloroethene	0.20	U	ug/L
trans-1,3-Dichloropropene	0.50	U	ug/L
Trichloroethene	0.20	U	ug/L
Trichlorofluoromethane	0.20	U	ug/L
Vinyl chloride	0.20	U	ug/L

Reference Method: EPA 8260D
Batch ID: P378838

Component	Result	Code	Units
1,1-Dichloroethane	2.0	U	ug/kg
1,1-Dichloroethene	2.0	U	ug/kg
1,1,1-Trichloroethane	2.0	U	ug/kg
1,1,2-Trichloroethane	2.0	U	ug/kg
1,1,2,2-Tetrachloroethane	2.0	U	ug/kg
1,2-Dichlorobenzene	2.0	U	ug/kg
1,2-Dichloroethane	2.0	U	ug/kg
1,2-Dichloropropane	2.0	U	ug/kg
1,3-Dichlorobenzene	2.0	U	ug/kg
1,4-Dichlorobenzene	2.0	U	ug/kg
2-Butanone	10	U	ug/kg
Benzene	2.0	U	ug/kg
Bromodichloromethane	2.0	U	ug/kg
Bromoform	2.0	U	ug/kg
Bromomethane	2.0	U	ug/kg
Carbon tetrachloride	2.0	U	ug/kg
Chlorobenzene	2.0	U	ug/kg
Chloroethane	2.0	U	ug/kg
Chloroform	2.0	U	ug/kg
Chloromethane	2.0	U	ug/kg
cis-1,2-Dichloroethene	2.0	U	ug/kg
cis-1,3-Dichloropropene	2.0	U	ug/kg
Dibromochloromethane	2.0	U	ug/kg
Ethylbenzene	2.0	U	ug/kg
m,p-Xylene	2.0	U	ug/kg
Methyl-t-butyl ether	2.0	U	ug/kg
Methylene chloride	10	U	ug/kg
o-Xylene	2.0	U	ug/kg

Quality Assurance Report Method Blank Results

Reference Method: EPA 8260D
Batch ID: P378838

Component	Result	Code	Units
Tetrachloroethene	2.0	U	ug/kg
Toluene	2.0	U	ug/kg
trans-1,2-Dichloroethene	2.0	U	ug/kg
trans-1,3-Dichloropropene	2.0	U	ug/kg
Trichloroethene	2.0	U	ug/kg
Trichlorofluoromethane	2.0	U	ug/kg
Vinyl chloride	2.0	U	ug/kg

Reference Method: EPA 8260D
Batch ID: P378991

Component	Result	Code	Units
1,1-Dichloroethane	0.20	U	ug/L
1,1-Dichloroethene	0.20	U	ug/L
1,1,1-Trichloroethane	0.20	U	ug/L
1,1,2-Trichloroethane	0.20	U	ug/L
1,1,2,2-Tetrachloroethane	0.20	U	ug/L
1,2-Dichlorobenzene	0.50	U	ug/L
1,2-Dichloroethane	0.20	U	ug/L
1,2-Dichloropropane	0.20	U	ug/L
1,3-Dichlorobenzene	0.50	U	ug/L
1,4-Dichlorobenzene	0.50	U	ug/L
2-Butanone	3.0	U	ug/L
Benzene	0.20	U	ug/L
Bromodichloromethane	0.20	U	ug/L
Bromoform	0.50	U	ug/L
Bromomethane	0.50	U	ug/L
Carbon tetrachloride	0.20	U	ug/L
Chlorobenzene	0.20	U	ug/L
Chloroethane	0.50	U	ug/L
Chloroform	0.20	U	ug/L
Chloromethane	0.50	U	ug/L
cis-1,2-Dichloroethene	0.20	U	ug/L
cis-1,3-Dichloropropene	0.50	U	ug/L
Dibromochloromethane	0.20	U	ug/L
Ethylbenzene	0.20	U	ug/L
m,p-Xylene	0.50	U	ug/L
Methyl-t-butyl ether	0.20	U	ug/L
Methylene chloride	1.0	U	ug/L
o-Xylene	0.50	U	ug/L
Tetrachloroethene	0.20	U	ug/L
Toluene	0.50	U	ug/L
trans-1,2-Dichloroethene	0.20	U	ug/L
trans-1,3-Dichloropropene	0.50	U	ug/L
Trichloroethene	0.20	U	ug/L
Trichlorofluoromethane	0.20	U	ug/L
Vinyl chloride	0.20	U	ug/L

Reference Method: EPA 8270E
Batch ID: P378094

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 8270E
 Batch ID: P378094

Component	Result	Code	Units
1,2,4-Trichlorobenzene	180	U	ug/kg
2-Chloronaphthalene	60	U	ug/kg
2-Chlorophenol	180	U	ug/kg
2-Methyl-4,6-dinitrophenol	60	U	ug/kg
2-Nitrophenol	60	U	ug/kg
2,4-Dichlorophenol	60	U	ug/kg
2,4-Dimethylphenol	360	U	ug/kg
2,4-Dinitrophenol	360	U	ug/kg
2,4-Dinitrotoluene	60	U	ug/kg
2,4,6-Trichlorophenol	60	U	ug/kg
2,6-Dinitrotoluene	60	U	ug/kg
3,3'-Dichlorobenzidine	3.6E+03	U	ug/kg
4-Bromophenyl phenyl ether	60	U	ug/kg
4-Chloro-3-methylphenol	60	U	ug/kg
4-Chlorophenyl phenyl ether	60	U	ug/kg
4-Nitrophenol	60	U	ug/kg
Acenaphthene	6.7	U	ug/kg
Acenaphthylene	6.7	U	ug/kg
Anthracene	6.7	U	ug/kg
Azobenzene/1,2-Diphenylhydrazine	60	U	ug/kg
Benzidine	1.3E+03	U	ug/kg
Benzo(a)anthracene	6.7	U	ug/kg
Benzo(a)pyrene	6.7	U	ug/kg
Benzo(b)fluoranthene	6.7	U	ug/kg
Benzo(g,h,i)perylene	6.7	U	ug/kg
Benzo(k)fluoranthene	6.7	U	ug/kg
Bis(2-chloroethoxy)methane	60	U	ug/kg
Bis(2-chloroethyl)ether	60	U	ug/kg
Bis(2-chloroisopropyl)ether	60	U	ug/kg
Bis(2-ethylhexyl)phthalate	360	U	ug/kg
Butyl benzyl phthalate	60	U	ug/kg
Chrysene	6.7	U	ug/kg
Di-n-butyl phthalate	360	U	ug/kg
Di-n-octyl phthalate	60	U	ug/kg
Dibenzo(a,h)anthracene	6.7	U	ug/kg
Diethyl phthalate	60	U	ug/kg
Dimethyl phthalate	60	U	ug/kg
Fluoranthene	6.7	U	ug/kg
Fluorene	6.7	U	ug/kg
Hexachlorobenzene	60	U	ug/kg
Hexachlorobutadiene	180	U	ug/kg
Hexachlorocyclopentadiene	60	U	ug/kg
Hexachloroethane	180	U	ug/kg
Indeno(1,2,3-cd)pyrene	6.7	U	ug/kg
Isophorone	60	U	ug/kg
N-Nitrosodi-n-propylamine	60	U	ug/kg
N-Nitrosodimethylamine	360	U	ug/kg
N-Nitrosodiphenylamine/ Diphenylamine	60	U	ug/kg
Naphthalene	6.7	U	ug/kg
Nitrobenzene	60	U	ug/kg
Pentachlorophenol	60	U	ug/kg
Phenanthrene	6.7	U	ug/kg

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270E
Batch ID: P378094

Component	Result	Code	Units
Phenol	60	U	ug/kg
Pyrene	6.7	U	ug/kg

Reference Method: EPA 8270E
Batch ID: P378646

Component	Result	Code	Units
1-Methylnaphthalene	0.10	U	ug/L
1-Naphthylamine	10	U	ug/L
1,2,4-Trichlorobenzene	0.050	U	ug/L
1,2,4,5-Tetrachlorobenzene	0.050	U	ug/L
1,3-Dinitrobenzene	0.10	U	ug/L
1,3,5-Trinitrobenzene	0.10	U	ug/L
2-Acetylaminofluorene	1.0	U	ug/L
2-Chloronaphthalene	0.050	U	ug/L
2-Chlorophenol	0.050	U	ug/L
2-Methyl-4,6-dinitrophenol	3.0	U	ug/L
2-Methylnaphthalene	0.10	U	ug/L
2-Naphthylamine	10	U	ug/L
2-Nitroaniline	0.050	U	ug/L
2-Nitrophenol	0.050	U	ug/L
2-Picoline	1.0	U	ug/L
2,3,4,6-Tetrachlorophenol	0.10	U	ug/L
2,4-Dichlorophenol	0.050	U	ug/L
2,4-Dimethylphenol	0.050	U	ug/L
2,4-Dinitrophenol	10	U	ug/L
2,4-Dinitrotoluene	0.050	U	ug/L
2,4,5-Trichlorophenol	0.050	U	ug/L
2,4,6-Trichlorophenol	0.050	U	ug/L
2,6-Dichlorophenol	0.050	U	ug/L
2,6-Dinitrotoluene	0.050	U	ug/L
3-Methylcholanthrene	0.10	U	ug/L
3,3'-Dichlorobenzidine	10	U	ug/L
4-Aminobiphenyl	4.0	U	ug/L
4-Bromophenyl phenyl ether	0.050	U	ug/L
4-Chloro-3-methylphenol	0.050	U	ug/L
4-Chlorophenyl phenyl ether	0.050	U	ug/L
4-Nitrophenol	10	U	ug/L
5-Nitro-o-toluidine	0.10	U	ug/L
7,12-Dimethylbenz(a)anthracene	0.10	U	ug/L
Acenaphthene	0.025	U	ug/L
Acenaphthylene	0.025	U	ug/L
Acetophenone	0.20	U	ug/L
Aniline	1.0	U	ug/L
Anthracene	0.050	U	ug/L
Azobenzene/1,2-Diphenylhydrazine	0.050	U	ug/L
Benzidine	10	U	ug/L
Benzo(a)anthracene	0.025	U	ug/L
Benzo(a)pyrene	0.025	U	ug/L
Benzo(b)fluoranthene	0.025	U	ug/L
Benzo(g,h,i)perylene	0.025	U	ug/L
Benzo(k)fluoranthene	0.025	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270E
 Batch ID: P378646

Component	Result	Code	Units
Benzyl alcohol	0.10	U	ug/L
Bis(2-chloroethoxy)methane	0.050	U	ug/L
Bis(2-chloroethyl)ether	0.050	U	ug/L
Bis(2-chloroisopropyl)ether	0.050	U	ug/L
Bis(2-ethylhexyl)phthalate	5.0	U	ug/L
Butyl benzyl phthalate	1.0	U	ug/L
Carbazole	0.050	U	ug/L
Chrysene	0.025	U	ug/L
Di-n-butyl phthalate	2.0	U	ug/L
Di-n-octyl phthalate	0.050	U	ug/L
Dibenzo(a,h)anthracene	0.025	U	ug/L
Dibenzofuran	0.050	U	ug/L
Diethyl phthalate	2.0	U	ug/L
Dimethyl phthalate	0.050	U	ug/L
Dimethylaminoazobenzene	0.050	U	ug/L
Dinoseb	4.0	U	ug/L
Ethyl methanesulfonate	1.0	U	ug/L
Fluoranthene	0.050	U	ug/L
Fluorene	0.025	U	ug/L
Hexachlorobenzene	0.050	U	ug/L
Hexachlorobutadiene	0.050	U	ug/L
Hexachlorocyclopentadiene	0.050	U	ug/L
Hexachloroethane	0.050	U	ug/L
Hexachloropropene	0.050	U	ug/L
Indeno(1,2,3-cd)pyrene	0.025	U	ug/L
Isophorone	0.050	U	ug/L
Isosafrole	0.050	U	ug/L
m,p-Cresols	0.050	U	ug/L
N-Nitrosodi-n-butylamine	0.050	U	ug/L
N-Nitrosodi-n-propylamine	0.050	U	ug/L
N-Nitrosodiethylamine	1.0	U	ug/L
N-Nitrosodimethylamine	2.0	U	ug/L
N-Nitrosomethylethylamine	2.0	U	ug/L
N-Nitrosomorpholine	0.050	U	ug/L
N-Nitrosopiperidine	0.050	U	ug/L
N-Nitrosopyrrolidine	0.050	U	ug/L
Naphthalene	0.10	U	ug/L
Nitrobenzene	0.050	U	ug/L
o-Cresol	0.050	U	ug/L
o-Toluidine	0.10	U	ug/L
Pentachlorobenzene	0.050	U	ug/L
Pentachloroethane	0.050	U	ug/L
Pentachloronitrobenzene	0.050	U	ug/L
Pentachlorophenol	0.50	U	ug/L
Phenacetin	0.10	U	ug/L
Phenanthrene	0.10	U	ug/L
Phenol	0.050	U	ug/L
Pyrene	0.10	U	ug/L
Pyridine	4.0	U	ug/L
Safrole	0.050	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P378518

Component	Result	Code	Units
4:2 Fluorotelomer sulfonate (4:2 FTS)	0.20	U	ug/Kg
6:2 Fluorotelomer sulfonate (6:2 FTS)	0.40	U	ug/Kg
8:2 Fluorotelomer sulfonate (8:2 FTS)	0.20	U	ug/Kg
N-Et perfluorooctanesulfonamidoAc acid	0.10	U	ug/Kg
N-Me perfluorooctanesulfonamidoAc acid	0.10	U	ug/Kg
Perfluorobutanesulfonic acid (PFBS)	0.10	U	ug/Kg
Perfluorodecanesulfonic acid (PFDS)	0.10	U	ug/Kg
Perfluorodecanoic acid (PFDA)	0.10	U	ug/Kg
Perfluorododecanoic acid (PFDoA)	0.10	U	ug/Kg
Perfluoroheptanesulfonic acid (PFHpS)	0.10	U	ug/Kg
Perfluoroheptanoic acid (PFHpA)	0.10	U	ug/Kg
Perfluorohexanesulfonic acid (PFHxS)	0.10	U	ug/Kg
Perfluorohexanoic acid (PFHxA)	0.10	U	ug/Kg
Perfluorononanesulfonic acid (PFNS)	0.10	U	ug/Kg
Perfluorononanoic acid (PFNA)	0.10	U	ug/Kg
Perfluorooctanesulfonic acid (PFOS)	0.20	U	ug/Kg
Perfluorooctanoic acid (PFOA)	0.10	U	ug/Kg
Perfluoropentanesulfonic acid (PFPeS)	0.10	U	ug/Kg
Perfluoropentanoic acid (PFPeA)	0.40	U	ug/Kg
Perfluorotetradecanoic acid (PFTeA)	0.10	U	ug/Kg
Perfluorotridecanoic acid (PFTriA)	0.10	U	ug/Kg
Perfluoroundecanoic acid (PFUnA)	0.10	U	ug/Kg

Reference Method: EPA 8321B
Batch ID: P378552

Component	Result	Code	Units
4:2 Fluorotelomer sulfonate (4:2 FTS)	2.0	U	ng/L
6:2 Fluorotelomer sulfonate (6:2 FTS)	4.0	U	ng/L
8:2 Fluorotelomer sulfonate (8:2 FTS)	2.0	U	ng/L
Hexafluoropropylene oxide dimer acid	1.0	U	ng/L
N-Et perfluorooctanesulfonamidoAc acid	0.40	U	ng/L
N-Me perfluorooctanesulfonamidoAc acid	0.40	U	ng/L
Perfluorobutanesulfonic acid (PFBS)	0.40	U	ng/L
Perfluorodecanesulfonic acid (PFDS)	0.40	U	ng/L
Perfluorodecanoic acid (PFDA)	1.0	U	ng/L
Perfluorododecanoic acid (PFDoA)	1.0	U	ng/L
Perfluoroheptanesulfonic acid (PFHpS)	0.40	U	ng/L
Perfluoroheptanoic acid (PFHpA)	2.0	U	ng/L
Perfluorohexanesulfonic acid (PFHxS)	0.40	U	ng/L
Perfluorohexanoic acid (PFHxA)	2.0	U	ng/L
Perfluorononanesulfonic acid (PFNS)	0.40	U	ng/L
Perfluorononanoic acid (PFNA)	1.0	U	ng/L
Perfluorooctanesulfonic acid (PFOS)	2.0	U	ng/L
Perfluorooctanoic acid (PFOA)	1.0	U	ng/L
Perfluoropentanesulfonic acid (PFPeS)	0.40	U	ng/L
Perfluoropentanoic acid (PFPeA)	4.0	U	ng/L
Perfluorotetradecanoic acid (PFTeA)	0.40	U	ng/L
Perfluorotridecanoic acid (PFTriA)	0.40	U	ng/L
Perfluoroundecanoic acid (PFUnA)	1.0	U	ng/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 6020A
Batch ID: P378573

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	98.2		P	80 - 120
Barium	99.2		P	80 - 120
Cadmium	94.4		P	80 - 120
Chromium	98.3		P	80 - 120
Lead	101		P	80 - 120
Selenium	94.2		P	80 - 120
Silver	112		P	80 - 120

Reference Method: EPA 6020A
Batch ID: P378666

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	103		P	85 - 115
Barium	102		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	98.2		P	85 - 115
Lead	98.6		P	85 - 115
Selenium	101		P	85 - 115
Silver	104		P	85 - 115

Reference Method: EPA 7473
Batch ID: P378957

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Mercury	98.4		P	80 - 120

Reference Method: EPA 7473
Batch ID: P379133

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Mercury	102		P	80 - 120

Reference Method: EPA 8260D
Batch ID: P378732

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1,1-Dichloroethane	104	103	P/P	70 - 130
1,1-Dichloroethene	98.0	96.2	P/P	70 - 130
1,1,1-Trichloroethane	98.8	96.3	P/P	70 - 130
1,1,2-Trichloroethane	102	105	P/P	70 - 130
1,1,2,2-Tetrachloroethane	97.5	96.7	P/P	60 - 140
1,2-Dichlorobenzene	97.4	94.4	P/P	70 - 130
1,2-Dichloroethane	104	102	P/P	70 - 130
1,2-Dichloropropane	106	104	P/P	70 - 130
1,3-Dichlorobenzene	96.6	95.3	P/P	70 - 130
1,4-Dichlorobenzene	99.8	97.2	P/P	70 - 130
2-Butanone	101	99.0	P/P	60 - 140
Benzene	105	103	P/P	70 - 130
Bromodichloromethane	96.6	94.6	P/P	70 - 130
Bromoform	90.8	87.4	P/P	60 - 140
Bromomethane	96.2	94.2	P/P	60 - 140
Carbon tetrachloride	106	104	P/P	70 - 130

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8260D
 Batch ID: P378732

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorobenzene	99.6	96.2	P/P	70 - 130
Chloroethane	96.8	95.2	P/P	60 - 140
Chloroform	102	100	P/P	70 - 130
Chloromethane	100	98.2	P/P	60 - 140
cis-1,2-Dichloroethene	104	101	P/P	70 - 130
cis-1,3-Dichloropropene	94.0	91.6	P/P	60 - 140
Dibromochloromethane	97.8	94.4	P/P	60 - 140
Ethylbenzene	99.0	96.0	P/P	70 - 130
m,p-Xylene	104	100	P/P	70 - 130
Methyl-t-butyl ether	96.2	95.1	P/P	60 - 140
Methylene chloride	104	101	P/P	70 - 130
o-Xylene	90.6	87.2	P/P	70 - 130
Tetrachloroethene	104	101	P/P	70 - 130
Toluene	104	101	P/P	70 - 130
trans-1,2-Dichloroethene	101	99.8	P/P	70 - 130
trans-1,3-Dichloropropene	98.8	94.6	P/P	60 - 140
Trichloroethene	103	100	P/P	70 - 130
Trichlorofluoromethane	108	106	P/P	60 - 140
Vinyl chloride	94.4	93.8	P/P	60 - 140

Reference Method: EPA 8260D
 Batch ID: P378838

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1,1-Dichloroethane	98.9	111	P/P	60 - 140
1,1-Dichloroethene	106	117	P/P	60 - 140
1,1,1-Trichloroethane	102	114	P/P	70 - 140
1,1,2-Trichloroethane	104	109	P/P	70 - 140
1,1,2,2-Tetrachloroethane	107	110	P/P	55 - 140
1,2-Dichlorobenzene	93.5	102	P/P	45 - 140
1,2-Dichloroethane	98.7	109	P/P	60 - 140
1,2-Dichloropropane	91.5	103	P/P	70 - 140
1,3-Dichlorobenzene	93.5	102	P/P	45 - 140
1,4-Dichlorobenzene	99.5	108	P/P	45 - 140
2-Butanone	89.4	95.9	P/P	50 - 140
Benzene	96.4	109	P/P	70 - 140
Bromodichloromethane	97.9	110	P/P	70 - 140
Bromoform	101	107	P/P	50 - 140
Bromomethane	94.0	108	P/P	50 - 140
Carbon tetrachloride	98.5	109	P/P	70 - 140
Chlorobenzene	97.3	108	P/P	60 - 140
Chloroethane	98.7	110	P/P	50 - 140
Chloroform	102	116	P/P	70 - 140
Chloromethane	101	107	P/P	50 - 140
cis-1,2-Dichloroethene	90.6	103	P/P	70 - 140
cis-1,3-Dichloropropene	82.4	94.2	P/P	60 - 140
Dibromochloromethane	99.5	104	P/P	60 - 140
Ethylbenzene	97.6	108	P/P	60 - 140
m,p-Xylene	101	113	P/P	60 - 140
Methyl-t-butyl ether	95.8	107	P/P	60 - 140
Methylene chloride	96.2	107	P/P	60 - 140
o-Xylene	104	118	P/P	60 - 140

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8260D
Batch ID: P378838

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Tetrachloroethene	105	111	P/P	60 - 140
Toluene	95.0	111	P/P	60 - 140
trans-1,2-Dichloroethene	102	112	P/P	60 - 140
trans-1,3-Dichloropropene	92.1	99.0	P/P	60 - 140
Trichloroethene	98.6	112	P/P	70 - 140
Trichlorofluoromethane	104	112	P/P	50 - 140
Vinyl chloride	108	119	P/P	50 - 140

Reference Method: EPA 8260D
Batch ID: P378991

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1,1-Dichloroethane	104	105	P/P	70 - 130
1,1-Dichloroethene	107	108	P/P	70 - 130
1,1,1-Trichloroethane	109	110	P/P	70 - 130
1,1,2-Trichloroethane	102	105	P/P	70 - 130
1,1,2,2-Tetrachloroethane	126	118	P/P	60 - 140
1,2-Dichlorobenzene	91.6	95.8	P/P	70 - 130
1,2-Dichloroethane	113	114	P/P	70 - 130
1,2-Dichloropropane	102	103	P/P	70 - 130
1,3-Dichlorobenzene	92.7	96.4	P/P	70 - 130
1,4-Dichlorobenzene	91.6	95.9	P/P	70 - 130
2-Butanone	93.2	94.9	P/P	60 - 140
Benzene	111	113	P/P	70 - 130
Bromodichloromethane	112	114	P/P	70 - 130
Bromoform	90.3	90.3	P/P	60 - 140
Bromomethane	93.4	92.2	P/P	60 - 140
Carbon tetrachloride	105	106	P/P	70 - 130
Chlorobenzene	108	111	P/P	70 - 130
Chloroethane	89.3	87.8	P/P	60 - 140
Chloroform	113	115	P/P	70 - 130
Chloromethane	86.2	85.2	P/P	60 - 140
cis-1,2-Dichloroethene	100	101	P/P	70 - 130
cis-1,3-Dichloropropene	94.7	95.0	P/P	60 - 140
Dibromochloromethane	102	103	P/P	60 - 140
Ethylbenzene	113	115	P/P	70 - 130
m,p-Xylene	116	119	P/P	70 - 130
Methyl-t-butyl ether	98.6	98.6	P/P	70 - 130
Methylene chloride	102	103	P/P	70 - 130
o-Xylene	109	111	P/P	70 - 130
Tetrachloroethene	104	107	P/P	70 - 130
Toluene	112	113	P/P	70 - 130
trans-1,2-Dichloroethene	106	107	P/P	70 - 130
trans-1,3-Dichloropropene	86.2	87.6	P/P	60 - 140
Trichloroethene	107	117	P/P	70 - 130
Trichlorofluoromethane	83.7	82.8	P/P	60 - 140
Vinyl chloride	87.9	87.6	P/P	60 - 140

Reference Method: EPA 8270E
Batch ID: P378094

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
 Batch ID: P378094

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1,2,4-Trichlorobenzene	81.6		P	40 - 140
2-Chloronaphthalene	83.0		P	40 - 140
2-Chlorophenol	82.1		P	40 - 140
2-Methyl-4,6-dinitrophenol	97.3		P	40 - 140
2-Nitrophenol	67.4		P	40 - 140
2,4-Dichlorophenol	88.2		P	40 - 140
2,4-Dimethylphenol	75.8		P	40 - 140
2,4-Dinitrophenol	137		P	40 - 140
2,4-Dinitrotoluene	87.9		P	40 - 140
2,4,6-Trichlorophenol	85.4		P	40 - 140
2,6-Dinitrotoluene	96.6		P	40 - 140
3,3'-Dichlorobenzidine	105		P	10 - 200
4-Bromophenyl phenyl ether	89.2		P	40 - 140
4-Chloro-3-methylphenol	95.1		P	40 - 140
4-Chlorophenyl phenyl ether	88.4		P	40 - 140
4-Nitrophenol	80.4		P	40 - 140
Acenaphthene	85.8		P	40 - 140
Acenaphthylene	83.6		P	40 - 140
Anthracene	86.9		P	40 - 140
Azobenzene/1,2-Diphenylhydrazine	87.6		P	40 - 140
Benzidine	57.8		P	10 - 200
Benzo(a)anthracene	101		P	40 - 140
Benzo(a)pyrene	85.0		P	40 - 140
Benzo(b)fluoranthene	103		P	40 - 140
Benzo(g,h,i)perylene	93.0		P	40 - 140
Benzo(k)fluoranthene	65.5		P	40 - 140
Bis(2-chloroethoxy)methane	77.3		P	40 - 140
Bis(2-chloroethyl)ether	84.9		P	40 - 140
Bis(2-chloroisopropyl)ether	54.5		P	40 - 160
Bis(2-ethylhexyl)phthalate	111		P	40 - 140
Butyl benzyl phthalate	104		P	40 - 140
Chrysene	100		P	40 - 140
Di-n-butyl phthalate	93.1		P	40 - 140
Di-n-octyl phthalate	86.1		P	40 - 140
Dibenzo(a,h)anthracene	90.8		P	40 - 140
Diethyl phthalate	88.1		P	40 - 140
Dimethyl phthalate	90.2		P	40 - 140
Fluoranthene	86.5		P	40 - 140
Fluorene	77.4		P	40 - 140
Hexachlorobenzene	90.0		P	40 - 140
Hexachlorobutadiene	80.6		P	40 - 140
Hexachlorocyclopentadiene	83.9		P	40 - 140
Hexachloroethane	75.4		P	40 - 140
Indeno(1,2,3-cd)pyrene	90.5		P	40 - 140
Isophorone	77.8		P	40 - 140
N-Nitrosodi-n-propylamine	73.4		P	40 - 140
N-Nitrosodimethylamine	58.9		P	40 - 140
N-Nitrosodiphenylamine/ Diphenylamine	128		P	40 - 140
Naphthalene	80.2		P	40 - 140
Nitrobenzene	73.5		P	40 - 140
Pentachlorophenol	73.0		P	40 - 140
Phenanthrene	87.6		P	40 - 140

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
 Batch ID: P378094

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Phenol	70.6		P	40 - 140
Pyrene	94.0		P	40 - 140

Reference Method: EPA 8270E
 Batch ID: P378646

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1-Methylnaphthalene	93.0		P	50 - 130
1-Naphthylamine	15.0		F	20 - 130
1,2,4-Trichlorobenzene	83.8		P	50 - 130
1,2,4,5-Tetrachlorobenzene	82.9		P	50 - 130
1,3-Dinitrobenzene	102		P	50 - 130
1,3,5-Trinitrobenzene	121		P	50 - 150
2-Acetylaminofluorene	91.8		P	50 - 130
2-Chloronaphthalene	90.7		P	50 - 130
2-Chlorophenol	93.4		P	50 - 130
2-Methyl-4,6-dinitrophenol	142		P	50 - 150
2-Methylnaphthalene	91.4		P	50 - 130
2-Naphthylamine	17.3		F	20 - 130
2-Nitroaniline	94.8		P	50 - 130
2-Nitrophenol	95.3		P	50 - 130
2-Picoline	80.0		P	40 - 130
2,3,4,6-Tetrachlorophenol	126		P	50 - 130
2,4-Dichlorophenol	86.8		P	50 - 130
2,4-Dimethylphenol	67.4		P	50 - 130
2,4-Dinitrophenol	80.8		P	30 - 160
2,4-Dinitrotoluene	96.2		P	50 - 130
2,4,5-Trichlorophenol	99.1		P	50 - 130
2,4,6-Trichlorophenol	90.9		P	50 - 130
2,6-Dichlorophenol	98.3		P	50 - 130
2,6-Dinitrotoluene	91.5		P	50 - 130
3-Methylcholanthrene	88.9		P	50 - 130
3,3'-Dichlorobenzidine	114		P	20 - 200
4-Aminobiphenyl	71.5		P	30 - 130
4-Bromophenyl phenyl ether	93.4		P	50 - 130
4-Chloro-3-methylphenol	89.1		P	50 - 130
4-Chlorophenyl phenyl ether	88.3		P	50 - 130
4-Nitrophenol	56.9		P	15 - 110
5-Nitro-o-toluidine	99.6		P	50 - 130
7,12-Dimethylbenz(a)anthracene	94.0		P	50 - 130
Acenaphthene	92.3		P	50 - 130
Acenaphthylene	88.2		P	50 - 130
Acetophenone	89.3		P	50 - 130
Aniline	105		P	30 - 130
Anthracene	93.5		P	50 - 130
Azobenzene/1,2-Diphenylhydrazine	95.8		P	50 - 130
Benzidine	67.1		P	0.0 - 240
Benzo(a)anthracene	98.9		P	50 - 130
Benzo(a)pyrene	89.6		P	50 - 130
Benzo(b)fluoranthene	101		P	50 - 130
Benzo(g,h,i)perylene	94.0		P	50 - 130
Benzo(k)fluoranthene	91.2		P	50 - 130

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
 Batch ID: P378646

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Benzyl alcohol	102		P	50 - 130
Bis(2-chloroethoxy)methane	85.4		P	50 - 130
Bis(2-chloroethyl)ether	73.0		P	50 - 160
Bis(2-chloroisopropyl)ether	95.4		P	50 - 130
Bis(2-ethylhexyl)phthalate	107		P	50 - 160
Butyl benzyl phthalate	103		P	50 - 160
Carbazole	88.4		P	50 - 130
Chrysene	92.1		P	50 - 130
Di-n-butyl phthalate	102		P	50 - 130
Di-n-octyl phthalate	104		P	50 - 130
Dibenzo(a,h)anthracene	95.1		P	50 - 130
Dibenzofuran	93.9		P	50 - 130
Diethyl phthalate	103		P	50 - 130
Dimethyl phthalate	102		P	50 - 130
Dimethylaminoazobenzene	95.0		P	50 - 130
Dinoseb	119		P	50 - 150
Ethyl methanesulfonate	88.0		P	50 - 130
Fluoranthene	95.4		P	50 - 130
Fluorene	89.0		P	50 - 130
Hexachlorobenzene	90.6		P	50 - 130
Hexachlorobutadiene	72.4		P	20 - 130
Hexachlorocyclopentadiene	51.3		P	20 - 130
Hexachloroethane	77.7		P	40 - 130
Hexachloropropene	86.9		P	50 - 130
Indeno(1,2,3-cd)pyrene	93.1		P	50 - 130
Isophorone	86.7		P	50 - 130
Isosafrole	93.3		P	50 - 130
m,p-Cresols	100		P	50 - 130
N-Nitrosodi-n-butylamine	89.9		P	50 - 130
N-Nitrosodi-n-propylamine	100		P	50 - 130
N-Nitrosodiethylamine	86.5		P	50 - 130
N-Nitrosodimethylamine	87.7		P	30 - 130
N-Nitrosomethylethylamine	83.4		P	50 - 130
N-Nitrosomorpholine	83.4		P	50 - 150
N-Nitrosopiperidine	87.9		P	50 - 130
N-Nitrosopyrrolidine	74.8		P	50 - 130
Naphthalene	88.6		P	50 - 130
Nitrobenzene	97.4		P	50 - 130
o-Cresol	85.8		P	50 - 130
o-Toluidine	89.7		P	50 - 130
Pentachlorobenzene	88.4		P	50 - 130
Pentachloroethane	76.7		P	50 - 130
Pentachloronitrobenzene	94.6		P	50 - 130
Pentachlorophenol	81.7		P	50 - 130
Phenacetin	103		P	50 - 130
Phenanthrene	95.7		P	50 - 130
Phenol	70.3		P	15 - 110
Pyrene	95.7		P	50 - 130
Pyridine	75.1		P	20 - 130
Safrole	93.3		P	50 - 130

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P378518

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	89.5		P	40 - 150
6:2 Fluorotelomer sulfonate (6:2 FTS)	66.8		P	40 - 150
8:2 Fluorotelomer sulfonate (8:2 FTS)	99.7		P	40 - 150
N-Et perfluorooctanesulfonamidoAc acid	89.1		P	40 - 150
N-Me perfluorooctanesulfonamidoAc acid	83.5		P	40 - 150
Perfluorobutanesulfonic acid (PFBS)	93.0		P	40 - 150
Perfluorodecanesulfonic acid (PFDS)	93.8		P	40 - 150
Perfluorodecanoic acid (PFDA)	81.6		P	40 - 150
Perfluorododecanoic acid (PFDoA)	79.9		P	40 - 150
Perfluoroheptanesulfonic acid (PFHpS)	97.2		P	40 - 150
Perfluoroheptanoic acid (PFHpA)	60.4		P	40 - 150
Perfluorohexanesulfonic acid (PFHxS)	82.8		P	40 - 150
Perfluorohexanoic acid (PFHxA)	94.1		P	40 - 150
Perfluorononanesulfonic acid (PFNS)	78.0		P	40 - 150
Perfluorononanoic acid (PFNA)	94.5		P	40 - 150
Perfluorooctanesulfonic acid (PFOS)	84.0		P	40 - 150
Perfluorooctanoic acid (PFOA)	87.1		P	40 - 150
Perfluoropentanesulfonic acid (PFPeS)	92.2		P	40 - 150
Perfluoropentanoic acid (PFPeA)	101		P	40 - 150
Perfluorotetradecanoic acid (PFTeA)	95.8		P	40 - 150
Perfluorotridecanoic acid (PFTriA)	95.0		P	40 - 150
Perfluoroundecanoic acid (PFUnA)	79.9		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P378552

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	66.3		P	30 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	61.1		P	30 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	129		P	30 - 160
Hexafluoropropylene oxide dimer acid	123		P	30 - 160
N-Et perfluorooctanesulfonamidoAc acid	78.0		P	30 - 160
N-Me perfluorooctanesulfonamidoAc acid	70.9		P	30 - 160
Perfluorobutanesulfonic acid (PFBS)	72.7		P	30 - 160
Perfluorodecanesulfonic acid (PFDS)	87.6		P	30 - 160
Perfluorodecanoic acid (PFDA)	87.6		P	30 - 160
Perfluorododecanoic acid (PFDoA)	56.6		P	30 - 160
Perfluoroheptanesulfonic acid (PFHpS)	92.9		P	30 - 160
Perfluoroheptanoic acid (PFHpA)	49.0		P	30 - 160
Perfluorohexanesulfonic acid (PFHxS)	82.2		P	30 - 160
Perfluorohexanoic acid (PFHxA)	118		P	30 - 160
Perfluorononanesulfonic acid (PFNS)	57.9		P	30 - 160
Perfluorononanoic acid (PFNA)	110		P	30 - 160
Perfluorooctanesulfonic acid (PFOS)	64.1		P	30 - 160
Perfluorooctanoic acid (PFOA)	61.8		P	30 - 160
Perfluoropentanesulfonic acid (PFPeS)	73.7		P	30 - 160
Perfluoropentanoic acid (PFPeA)	90.2		P	30 - 160
Perfluorotetradecanoic acid (PFTeA)	41.9		P	30 - 160
Perfluorotridecanoic acid (PFTriA)	46.5		P	30 - 160
Perfluoroundecanoic acid (PFUnA)	90.1		P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 6020A
 Batch ID: P378573

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2153331	Arsenic	101	97.7	P/P	75 - 125
2153331	Barium	122	97.9	P/P	75 - 125
2153331	Cadmium	101	95.6	P/P	75 - 125
2153331	Chromium	96.7	97.4	P/P	75 - 125
2153331	Lead	107	101	P/P	75 - 125
2153331	Selenium	98.4	94.5	P/P	75 - 125
2153331	Silver	109	109	P/P	75 - 125

Reference Method: EPA 6020A
 Batch ID: P378666

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156164	Arsenic	108		P	80 - 120
2156164	Barium	102		P	80 - 120
2156164	Cadmium	104		P	80 - 120
2156164	Chromium	99.8		P	80 - 120
2156164	Lead	99.3		P	80 - 120
2156164	Selenium	104		P	80 - 120
2156164	Silver	103		P	80 - 120
2156185	Arsenic	103	106	P/P	80 - 120
2156185	Barium	102	103	P/P	80 - 120
2156185	Cadmium	103	105	P/P	80 - 120
2156185	Chromium	97.6	99.9	P/P	80 - 120
2156185	Lead	97.6	98.5	P/P	80 - 120
2156185	Selenium	101	103	P/P	80 - 120
2156185	Silver	103	104	P/P	80 - 120

Reference Method: EPA 7473
 Batch ID: P378957

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155783	Mercury	95.1	95.1	P/P	80 - 120

Reference Method: EPA 7473
 Batch ID: P379133

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158230	Mercury	101	102	P/P	80 - 120

Reference Method: EPA 8260D
 Batch ID: P378732

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155798	1,1-Dichloroethane	98.6	101	P/P	70 - 130
2155798	1,1-Dichloroethene	93.2	95.3	P/P	70 - 130
2155798	1,1,1-Trichloroethane	93.2	94.6	P/P	70 - 130
2155798	1,1,2-Trichloroethane	103	105	P/P	70 - 130
2155798	1,1,2,2-Tetrachloroethane	96.4	97.6	P/P	60 - 140
2155798	1,2-Dichlorobenzene	86.4	91.5	P/P	70 - 130
2155798	1,2-Dichloroethane	97.4	100	P/P	70 - 130
2155798	1,2-Dichloropropane	100	103	P/P	70 - 130
2155798	1,3-Dichlorobenzene	89.2	94.1	P/P	70 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8260D
 Batch ID: P378732

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155798	1,4-Dichlorobenzene	89.9	95.1	P/P	70 - 130
2155798	2-Butanone	104	109	P/P	60 - 140
2155798	Benzene	98.8	102	P/P	70 - 130
2155798	Bromodichloromethane	89.8	93.4	P/P	70 - 130
2155798	Bromoform	85.4	87.8	P/P	60 - 140
2155798	Bromomethane	91.8	94.8	P/P	60 - 140
2155798	Carbon tetrachloride	99.2	101	P/P	70 - 130
2155798	Chlorobenzene	94.0	97.7	P/P	70 - 130
2155798	Chloroethane	90.9	94.7	P/P	60 - 140
2155798	Chloroform	96.0	98.9	P/P	70 - 130
2155798	Chloromethane	101	112	P/P	60 - 140
2155798	cis-1,2-Dichloroethene	77.2	88.0	P/P	70 - 130
2155798	cis-1,3-Dichloropropene	90.6	93.6	P/P	60 - 140
2155798	Dibromochloromethane	93.3	94.6	P/P	60 - 140
2155798	Ethylbenzene	93.2	96.0	P/P	70 - 130
2155798	m,p-Xylene	96.4	100	P/P	70 - 130
2155798	Methyl-t-butyl ether	91.4	94.2	P/P	60 - 140
2155798	Methylene chloride	93.2	95.8	P/P	70 - 130
2155798	o-Xylene	84.0	87.6	P/P	70 - 130
2155798	Tetrachloroethene	99.9	102	P/P	70 - 130
2155798	Toluene	97.5	101	P/P	70 - 130
2155798	trans-1,2-Dichloroethene	94.4	97.6	P/P	70 - 130
2155798	trans-1,3-Dichloropropene	93.0	95.4	P/P	60 - 140
2155798	Trichloroethene	94.8	98.0	P/P	70 - 130
2155798	Trichlorofluoromethane	101	103	P/P	60 - 140
2155798	Vinyl chloride	89.2	92.6	P/P	60 - 140

Reference Method: EPA 8260D
 Batch ID: P378838

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155786	1,1-Dichloroethane	111	110	P/P	60 - 140
2155786	1,1-Dichloroethene	120	120	P/P	60 - 140
2155786	1,1,1-Trichloroethane	114	114	P/P	70 - 140
2155786	1,1,2-Trichloroethane	96.6	95.7	P/P	70 - 140
2155786	1,1,2,2-Tetrachloroethane	85.7	88.9	P/P	55 - 140
2155786	1,2-Dichlorobenzene	63.2	60.1	P/P	45 - 140
2155786	1,2-Dichloroethane	99.2	101	P/P	60 - 140
2155786	1,2-Dichloropropane	96.2	97.2	P/P	70 - 140
2155786	1,3-Dichlorobenzene	66.6	64.4	P/P	45 - 140
2155786	1,4-Dichlorobenzene	71.6	67.8	P/P	45 - 140
2155786	2-Butanone	75.9	84.2	P/P	50 - 140
2155786	Benzene	105	104	P/P	70 - 140
2155786	Bromodichloromethane	101	102	P/P	70 - 140
2155786	Bromoform	83.2	88.2	P/P	50 - 140
2155786	Bromomethane	75.2	78.8	P/P	50 - 140
2155786	Carbon tetrachloride	106	108	P/P	70 - 140
2155786	Chlorobenzene	90.6	89.9	P/P	60 - 140
2155786	Chloroethane	112	112	P/P	50 - 140
2155786	Chloroform	110	110	P/P	70 - 140
2155786	Chloromethane	92.5	95.5	P/P	50 - 140
2155786	cis-1,2-Dichloroethene	96.2	96.1	P/P	70 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8260D
 Batch ID: P378838

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155786	cis-1,3-Dichloropropene	68.6	70.2	P/P	60 - 140
2155786	Dibromochloromethane	89.9	91.9	P/P	60 - 140
2155786	Ethylbenzene	91.1	91.2	P/P	60 - 140
2155786	m,p-Xylene	93.6	92.8	P/P	60 - 140
2155786	Methyl-t-butyl ether	97.8	101	P/P	60 - 140
2155786	Methylene chloride	110	110	P/P	60 - 140
2155786	o-Xylene	95.7	96.2	P/P	60 - 140
2155786	Tetrachloroethene	97.4	96.5	P/P	60 - 140
2155786	Toluene	100	102	P/P	60 - 140
2155786	trans-1,2-Dichloroethene	113	110	P/P	60 - 140
2155786	trans-1,3-Dichloropropene	74.5	75.4	P/P	60 - 140
2155786	Trichloroethene	108	108	P/P	70 - 140
2155786	Trichlorofluoromethane	120	120	P/P	50 - 140
2155786	Vinyl chloride	122	123	P/P	50 - 140

Reference Method: EPA 8260D
 Batch ID: P378991

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156189	1,1-Dichloroethane	104	105	P/P	70 - 130
2156189	1,1-Dichloroethene	100	130	P/P	70 - 130
2156189	1,1,1-Trichloroethane	110	122	P/P	70 - 130
2156189	1,1,2-Trichloroethane	106	96.5	P/P	70 - 130
2156189	1,1,2,2-Tetrachloroethane	138	129	P/P	60 - 140
2156189	1,2-Dichlorobenzene	98.4	97.4	P/P	70 - 130
2156189	1,2-Dichloroethane	112	113	P/P	70 - 130
2156189	1,2-Dichloropropane	102	91.4	P/P	70 - 130
2156189	1,3-Dichlorobenzene	97.9	97.4	P/P	70 - 130
2156189	1,4-Dichlorobenzene	98.5	97.4	P/P	70 - 130
2156189	2-Butanone	79.9	79.4	P/P	60 - 140
2156189	Benzene	113	108	P/P	70 - 130
2156189	Bromodichloromethane	114	113	P/P	70 - 130
2156189	Bromoform	84.0	87.2	P/P	60 - 140
2156189	Bromomethane	87.6	117	P/P	60 - 140
2156189	Carbon tetrachloride	105	124	P/P	70 - 130
2156189	Chlorobenzene	110	105	P/P	70 - 130
2156189	Chloroethane	83.8	111	P/P	60 - 140
2156189	Chloroform	114	124	P/P	70 - 130
2156189	Chloromethane	84.0	109	P/P	60 - 140
2156189	cis-1,2-Dichloroethene	101	102	P/P	70 - 130
2156189	cis-1,3-Dichloropropene	99.1	93.6	P/P	60 - 140
2156189	Dibromochloromethane	110	108	P/P	60 - 140
2156189	Ethylbenzene	110	107	P/P	70 - 130
2156189	m,p-Xylene	112	110	P/P	70 - 130
2156189	Methyl-t-butyl ether	103	128	P/P	70 - 130
2156189	Methylene chloride	94.4	125	P/P	70 - 130
2156189	o-Xylene	102	101	P/P	70 - 130
2156189	Tetrachloroethene	125	122	P/P	70 - 130
2156189	Toluene	108	101	P/P	70 - 130
2156189	trans-1,2-Dichloroethene	102	126	P/P	70 - 130
2156189	trans-1,3-Dichloropropene	98.4	93.1	P/P	60 - 140
2156189	Trichloroethene	102	102	P/P	70 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8260D
 Batch ID: P378991

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156189	Trichlorofluoromethane	75.2	104	P/P	60 - 140
2156189	Vinyl chloride	92.2	122	P/P	60 - 140

Reference Method: EPA 8270E
 Batch ID: P378094

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155782	1,2,4-Trichlorobenzene	71.4	75.7	P/P	40 - 140
2155782	2-Chloronaphthalene	78.2	81.1	P/P	40 - 140
2155782	2-Chlorophenol	73.6	76.1	P/P	40 - 140
2155782	2-Methyl-4,6-dinitrophenol	92.0	88.5	P/P	40 - 140
2155782	2-Nitrophenol	59.3	62.1	P/P	40 - 140
2155782	2,4-Dichlorophenol	79.6	84.8	P/P	40 - 140
2155782	2,4-Dimethylphenol	73.4	78.2	P/P	40 - 140
2155782	2,4-Dinitrophenol	132	127	P/P	40 - 140
2155782	2,4-Dinitrotoluene	85.6	86.6	P/P	40 - 140
2155782	2,4,6-Trichlorophenol	82.6	86.9	P/P	40 - 140
2155782	2,6-Dinitrotoluene	92.8	95.5	P/P	40 - 140
2155782	3,3'-Dichlorobenzidine	74.8	65.9	P/P	10 - 200
2155782	4-Bromophenyl phenyl ether	85.4	87.7	P/P	40 - 140
2155782	4-Chloro-3-methylphenol	87.8	93.5	P/P	40 - 140
2155782	4-Chlorophenyl phenyl ether	86.1	88.2	P/P	40 - 140
2155782	4-Nitrophenol	78.2	79.8	P/P	40 - 140
2155782	Acenaphthene	80.8	83.7	P/P	40 - 140
2155782	Acenaphthylene	78.9	82.7	P/P	40 - 140
2155782	Anthracene	83.2	83.6	P/P	40 - 140
2155782	Azobenzene/1,2-Diphenylhydrazine	81.9	82.1	P/P	40 - 140
2155782	Benzidine	0.0	1.20	F/F	10 - 200
2155782	Benzo(a)anthracene	94.4	91.0	P/P	40 - 140
2155782	Benzo(a)pyrene	80.5	78.6	P/P	40 - 140
2155782	Benzo(b)fluoranthene	70.5	81.2	P/P	40 - 140
2155782	Benzo(g,h,i)perylene	87.8	83.0	P/P	40 - 140
2155782	Benzo(k)fluoranthene	92.4	77.0	P/P	40 - 140
2155782	Bis(2-chloroethoxy)methane	68.4	70.8	P/P	40 - 140
2155782	Bis(2-chloroethyl)ether	74.6	76.0	P/P	40 - 140
2155782	Bis(2-chloroisopropyl)ether	46.0	46.7	P/P	40 - 160
2155782	Bis(2-ethylhexyl)phthalate	102	105	P/P	40 - 140
2155782	Butyl benzyl phthalate	95.5	91.4	P/P	40 - 140
2155782	Chrysene	91.9	89.1	P/P	40 - 140
2155782	Di-n-butyl phthalate	86.7	85.4	P/P	40 - 140
2155782	Di-n-octyl phthalate	80.8	78.0	P/P	40 - 140
2155782	Dibenzo(a,h)anthracene	85.6	81.8	P/P	40 - 140
2155782	Diethyl phthalate	83.4	84.3	P/P	40 - 140
2155782	Dimethyl phthalate	87.2	89.7	P/P	40 - 140
2155782	Fluoranthene	84.0	83.0	P/P	40 - 140
2155782	Fluorene	75.4	77.4	P/P	40 - 140
2155782	Hexachlorobenzene	84.8	86.3	P/P	40 - 140
2155782	Hexachlorobutadiene	70.0	74.1	P/P	40 - 140
2155782	Hexachlorocyclopentadiene	48.0	38.1	P/F	40 - 140
2155782	Hexachloroethane	59.7	56.4	P/P	40 - 140
2155782	Indeno(1,2,3-cd)pyrene	85.4	81.9	P/P	40 - 140
2155782	Isophorone	67.1	70.4	P/P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
 Batch ID: P378094

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155782	N-Nitrosodi-n-propylamine	62.8	64.4	P/P	40 - 140
2155782	N-Nitrosodimethylamine	49.9	48.3	P/P	40 - 140
2155782	N-Nitrosodiphenylamine/ Diphenylamine	120	123	P/P	40 - 140
2155782	Naphthalene	70.2	73.4	P/P	40 - 140
2155782	Nitrobenzene	64.1	65.9	P/P	40 - 140
2155782	Pentachlorophenol	75.1	74.7	P/P	40 - 140
2155782	Phenanthrene	84.8	84.4	P/P	40 - 140
2155782	Phenol	65.1	66.3	P/P	40 - 140
2155782	Pyrene	85.9	81.4	P/P	40 - 140

Reference Method: EPA 8270E
 Batch ID: P378646

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156972	1-Methylnaphthalene	90.1	95.1	P/P	50 - 130
2156972	1-Naphthylamine	30.5	25.2	P/P	20 - 130
2156972	1,2,4-Trichlorobenzene	85.7	86.3	P/P	50 - 130
2156972	1,2,4,5-Tetrachlorobenzene	87.8	86.7	P/P	50 - 130
2156972	1,3-Dinitrobenzene	108	106	P/P	50 - 130
2156972	1,3,5-Trinitrobenzene	122	114	P/P	50 - 150
2156972	2-Acetylaminoofluorene	95.1	97.5	P/P	50 - 130
2156972	2-Chloronaphthalene	87.6	91.4	P/P	50 - 130
2156972	2-Chlorophenol	100	98.5	P/P	50 - 130
2156972	2-Methyl-4,6-dinitrophenol	182	199	F/F	50 - 150
2156972	2-Methylnaphthalene	86.4	91.7	P/P	50 - 130
2156972	2-Naphthylamine	29.7	24.6	P/P	20 - 130
2156972	2-Nitroaniline	94.1	97.9	P/P	50 - 130
2156972	2-Nitrophenol	97.2	97.4	P/P	50 - 130
2156972	2-Picoline	78.4	89.5	P/P	40 - 130
2156972	2,3,4,6-Tetrachlorophenol	129	134	P/F	50 - 130
2156972	2,4-Dichlorophenol	91.6	96.3	P/P	50 - 130
2156972	2,4-Dimethylphenol	88.2	86.7	P/P	50 - 130
2156972	2,4-Dinitrophenol	146	158	P/P	30 - 160
2156972	2,4-Dinitrotoluene	95.0	97.1	P/P	50 - 130
2156972	2,4,5-Trichlorophenol	98.8	106	P/P	50 - 130
2156972	2,4,6-Trichlorophenol	96.7	102	P/P	50 - 130
2156972	2,6-Dichlorophenol	105	105	P/P	50 - 130
2156972	2,6-Dinitrotoluene	90.8	93.8	P/P	50 - 130
2156972	3-Methylcholanthrene	96.1	89.8	P/P	50 - 130
2156972	3,3'-Dichlorobenzidine	89.1	71.3	P/P	20 - 200
2156972	4-Aminobiphenyl	77.8	61.6	P/P	30 - 130
2156972	4-Bromophenyl phenyl ether	98.6	93.0	P/P	50 - 130
2156972	4-Chloro-3-methylphenol	94.0	95.2	P/P	50 - 130
2156972	4-Chlorophenyl phenyl ether	87.5	89.3	P/P	50 - 130
2156972	4-Nitrophenol	63.1	68.7	P/P	15 - 110
2156972	5-Nitro-o-toluidine	105	107	P/P	50 - 130
2156972	7,12-Dimethylbenz(a)anthracene	92.0	89.7	P/P	50 - 130
2156972	Acenaphthene	90.7	94.3	P/P	50 - 130
2156972	Acenaphthylene	89.6	93.0	P/P	50 - 130
2156972	Acetophenone	96.0	104	P/P	50 - 130
2156972	Aniline	115	110	P/P	30 - 130
2156972	Anthracene	102	99.0	P/P	50 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
 Batch ID: P378646

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156972	Azobenzene/1,2-Diphenylhydrazine	96.5	96.6	P/P	50 - 130
2156972	Benzidine	0.0500	0.150	P/P	0.0 - 240
2156972	Benzo(a)anthracene	98.0	98.9	P/P	50 - 130
2156972	Benzo(a)pyrene	92.3	88.0	P/P	50 - 130
2156972	Benzo(b)fluoranthene	96.9	93.3	P/P	50 - 130
2156972	Benzo(g,h,i)perylene	96.4	91.9	P/P	50 - 130
2156972	Benzo(k)fluoranthene	96.5	92.0	P/P	50 - 130
2156972	Benzyl alcohol	108	106	P/P	50 - 130
2156972	Bis(2-chloroethoxy)methane	88.6	88.2	P/P	50 - 130
2156972	Bis(2-chloroethyl)ether	78.3	74.3	P/P	50 - 160
2156972	Bis(2-chloroisopropyl)ether	101	96.7	P/P	50 - 130
2156972	Bis(2-ethylhexyl)phthalate	111	109	P/P	50 - 160
2156972	Butyl benzyl phthalate	106	106	P/P	50 - 160
2156972	Carbazole	109	108	P/P	50 - 130
2156972	Chrysene	93.8	93.3	P/P	50 - 130
2156972	Di-n-butyl phthalate	109	106	P/P	50 - 130
2156972	Di-n-octyl phthalate	104	100	P/P	50 - 130
2156972	Dibenzo(a,h)anthracene	96.6	91.6	P/P	50 - 130
2156972	Dibenzofuran	91.1	95.6	P/P	50 - 130
2156972	Diethyl phthalate	102	107	P/P	50 - 130
2156972	Dimethyl phthalate	98.0	102	P/P	50 - 130
2156972	Dimethylaminoazobenzene	88.4	85.9	P/P	50 - 130
2156972	Dinoseb	153	157	F/F	50 - 150
2156972	Ethyl methanesulfonate	94.0	102	P/P	50 - 130
2156972	Fluoranthene	102	97.6	P/P	50 - 130
2156972	Fluorene	88.3	92.0	P/P	50 - 130
2156972	Hexachlorobenzene	93.3	90.0	P/P	50 - 130
2156972	Hexachlorobutadiene	80.9	80.8	P/P	20 - 130
2156972	Hexachlorocyclopentadiene	42.5	53.1	P/P	20 - 130
2156972	Hexachloroethane	87.4	87.6	P/P	40 - 130
2156972	Hexachloropropene	88.6	92.5	P/P	50 - 130
2156972	Indeno(1,2,3-cd)pyrene	94.5	90.2	P/P	50 - 130
2156972	Isophorone	89.3	89.5	P/P	50 - 130
2156972	Isosafrole	94.5	96.5	P/P	50 - 130
2156972	m,p-Cresols	107	102	P/P	50 - 130
2156972	N-Nitrosodi-n-butylamine	91.9	94.5	P/P	50 - 130
2156972	N-Nitrosodi-n-propylamine	107	99.7	P/P	50 - 130
2156972	N-Nitrosodiethylamine	86.7	93.0	P/P	50 - 130
2156972	N-Nitrosodimethylamine	86.6	88.4	P/P	30 - 130
2156972	N-Nitrosomethylethylamine	83.3	91.9	P/P	50 - 130
2156972	N-Nitrosomorpholine	92.7	98.8	P/P	50 - 150
2156972	N-Nitrosopiperidine	93.0	100	P/P	50 - 130
2156972	N-Nitrosopyrrolidine	69.0	72.8	P/P	50 - 130
2156972	Naphthalene	89.2	89.4	P/P	50 - 130
2156972	Nitrobenzene	95.5	94.9	P/P	50 - 130
2156972	o-Cresol	97.7	95.7	P/P	50 - 130
2156972	o-Toluidine	97.7	102	P/P	50 - 130
2156972	Pentachlorobenzene	87.7	92.0	P/P	50 - 130
2156972	Pentachloroethane	81.7	88.0	P/P	50 - 130
2156972	Pentachloronitrobenzene	95.8	95.1	P/P	50 - 130
2156972	Pentachlorophenol	100	104	P/P	50 - 130
2156972	Phenacetin	108	107	P/P	50 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
 Batch ID: P378646

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156972	Phenanthrene	101	96.7	P/P	50 - 130
2156972	Phenol	72.9	73.9	P/P	15 - 110
2156972	Pyrene	98.8	99.2	P/P	50 - 130
2156972	Pyridine	79.6	76.7	P/P	20 - 130
2156972	Safrole	94.5	96.5	P/P	50 - 130

Reference Method: EPA 8321B
 Batch ID: P378518

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155846	4:2 Fluorotelomer sulfonate (4:2 FTS)	118	106	P/P	40 - 150
2155846	6:2 Fluorotelomer sulfonate (6:2 FTS)	88.3	78.8	P/P	40 - 150
2155846	8:2 Fluorotelomer sulfonate (8:2 FTS)	126	136	P/P	40 - 150
2155846	N-Et perfluorooctanesulfonamidoAc acid	109	118	P/P	40 - 150
2155846	N-Me perfluorooctanesulfonamidoAc acid	106	106	P/P	40 - 150
2155846	Perfluorobutanesulfonic acid (PFBS)	117	117	P/P	40 - 150
2155846	Perfluorodecanesulfonic acid (PFDS)	114	130	P/P	40 - 150
2155846	Perfluorodecanoic acid (PFDA)	124	162	P/F	40 - 150
2155846	Perfluorododecanoic acid (PFDoA)	76.7	89.0	P/P	40 - 150
2155846	Perfluoroheptanesulfonic acid (PFHpS)	116	139	P/P	40 - 150
2155846	Perfluoroheptanoic acid (PFHpA)	92.8	87.2	P/P	40 - 150
2155846	Perfluorohexanesulfonic acid (PFHxS)	97.5	109	P/P	40 - 150
2155846	Perfluorohexanoic acid (PFHxA)	130	145	P/P	40 - 150
2155846	Perfluorononanesulfonic acid (PFNS)	96.2	96.3	P/P	40 - 150
2155846	Perfluorononanoic acid (PFNA)	115	174	P/F	40 - 150
2155846	Perfluorooctanesulfonic acid (PFOS)	114	146	P/P	40 - 150
2155846	Perfluorooctanoic acid (PFOA)	120	115	P/P	40 - 150
2155846	Perfluoropentanesulfonic acid (PFPeS)	117	124	P/P	40 - 150
2155846	Perfluoropentanoic acid (PFPeA)	103	122	P/P	40 - 150
2155846	Perfluorotetradecanoic acid (PFTeA)	135	130	P/P	40 - 150
2155846	Perfluorotridecanoic acid (PFTriA)	107	109	P/P	40 - 150
2155846	Perfluoroundecanoic acid (PFUnA)	89.6	130	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P378552

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155815	4:2 Fluorotelomer sulfonate (4:2 FTS)	93.1	86.7	P/P	30 - 160
2155815	6:2 Fluorotelomer sulfonate (6:2 FTS)	71.1	77.2	P/P	30 - 160
2155815	8:2 Fluorotelomer sulfonate (8:2 FTS)	103	134	P/P	30 - 160
2155815	Hexafluoropropylene oxide dimer acid	98.0	138	P/P	30 - 160
2155815	N-Et perfluorooctanesulfonamidoAc acid	61.2	76.9	P/P	30 - 160
2155815	N-Me perfluorooctanesulfonamidoAc acid	51.9	60.9	P/P	30 - 160
2155815	Perfluorobutanesulfonic acid (PFBS)	66.8	71.4	P/P	30 - 160
2155815	Perfluorodecanesulfonic acid (PFDS)	50.7	71.3	P/P	30 - 160
2155815	Perfluorodecanoic acid (PFDA)	59.7	82.2	P/P	30 - 160
2155815	Perfluorododecanoic acid (PFDoA)	63.9	88.5	P/P	30 - 160
2155815	Perfluoroheptanesulfonic acid (PFHpS)	74.5	96.4	P/P	30 - 160
2155815	Perfluoroheptanoic acid (PFHpA)	47.5	53.6	P/P	30 - 160
2155815	Perfluorohexanesulfonic acid (PFHxS)	67.7	101	P/P	30 - 160
2155815	Perfluorohexanoic acid (PFHxA)	91.6	129	P/P	30 - 160
2155815	Perfluorononanesulfonic acid (PFNS)	39.3	57.8	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P378552

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155815	Perfluorononanoic acid (PFNA)	101	125	P/P	30 - 160
2155815	Perfluorooctanesulfonic acid (PFOS)	32.8	60.5	P/P	30 - 160
2155815	Perfluorooctanoic acid (PFOA)	53.0	64.7	P/P	30 - 160
2155815	Perfluoropentanesulfonic acid (PFPeS)	69.1	79.7	P/P	30 - 160
2155815	Perfluoropentanoic acid (PFPeA)	118	114	P/P	30 - 160
2155815	Perfluorotetradecanoic acid (PFTeA)	39.2	52.6	P/P	30 - 160
2155815	Perfluorotridecanoic acid (PFTriA)	55.1	45.0	P/P	30 - 160
2155815	Perfluoroundecanoic acid (PFUnA)	55.6	71.8	P/P	30 - 160

Quality Assurance Report Precision

Reference Method: EPA 6020A
 Batch ID: P378573

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2153331	Arsenic	3.60	Spike	P	0 - 20
2153331	Barium	18.4	Spike	P	0 - 20
2153331	Cadmium	5.39	Spike	P	0 - 20
2153331	Chromium	0.767	Spike	P	0 - 20
2153331	Lead	4.91	Spike	P	0 - 20
2153331	Selenium	4.02	Spike	P	0 - 20
2153331	Silver	0.0157	Spike	P	0 - 20

Reference Method: EPA 6020A
 Batch ID: P378666

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156185	Arsenic	2.36	Spike	P	0 - 20
2156185	Barium	1.48	Spike	P	0 - 20
2156185	Cadmium	2.04	Spike	P	0 - 20
2156185	Chromium	2.25	Spike	P	0 - 20
2156185	Lead	0.946	Spike	P	0 - 20
2156185	Selenium	1.58	Spike	P	0 - 20
2156185	Silver	1.17	Spike	P	0 - 20

Reference Method: EPA 7473
 Batch ID: P378957

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155783	Mercury	0.00630	Spike	P	0 - 20

Reference Method: EPA 7473
 Batch ID: P379133

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158230	Mercury	0.390	Spike	P	0 - 20

Reference Method: EPA 8260D
 Batch ID: P378732

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155798	1,1-Dichloroethane	2.70	Spike	P	0 - 30
2155798	1,1-Dichloroethene	2.28	Spike	P	0 - 30
2155798	1,1,1-Trichloroethane	1.49	Spike	P	0 - 30
2155798	1,1,2-Trichloroethane	2.07	Spike	P	0 - 30
2155798	1,1,2,2-Tetrachloroethane	1.34	Spike	P	0 - 30
2155798	1,2-Dichlorobenzene	5.68	Spike	P	0 - 30
2155798	1,2-Dichloroethane	2.74	Spike	P	0 - 30
2155798	1,2-Dichloropropane	2.99	Spike	P	0 - 30
2155798	1,3-Dichlorobenzene	5.29	Spike	P	0 - 30
2155798	1,4-Dichlorobenzene	5.62	Spike	P	0 - 30
2155798	2-Butanone	4.74	Spike	P	0 - 40

Quality Assurance Report Precision

Reference Method: EPA 8260D
 Batch ID: P378732

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155798	Benzene	2.89	Spike	P	0 - 30
2155798	Bromodichloromethane	3.87	Spike	P	0 - 30
2155798	Bromoform	2.77	Spike	P	0 - 30
2155798	Bromomethane	3.16	Spike	P	0 - 40
2155798	Carbon tetrachloride	2.04	Spike	P	0 - 30
2155798	Chlorobenzene	3.91	Spike	P	0 - 30
2155798	Chloroethane	4.09	Spike	P	0 - 40
2155798	Chloroform	3.03	Spike	P	0 - 30
2155798	Chloromethane	10.3	Spike	P	0 - 40
2155798	cis-1,2-Dichloroethene	3.07	Spike	P	0 - 30
2155798	cis-1,3-Dichloropropene	3.31	Spike	P	0 - 30
2155798	Dibromochloromethane	1.44	Spike	P	0 - 30
2155798	Ethylbenzene	2.85	Spike	P	0 - 30
2155798	m,p-Xylene	3.61	Spike	P	0 - 30
2155798	Methyl-t-butyl ether	3.12	Spike	P	0 - 30
2155798	Methylene chloride	2.70	Spike	P	0 - 30
2155798	o-Xylene	4.19	Spike	P	0 - 30
2155798	Tetrachloroethene	2.28	Spike	P	0 - 30
2155798	Toluene	3.28	Spike	P	0 - 30
2155798	trans-1,2-Dichloroethene	2.53	Spike	P	0 - 30
2155798	trans-1,3-Dichloropropene	2.49	Spike	P	0 - 30
2155798	Trichloroethene	3.28	Spike	P	0 - 30
2155798	Trichlorofluoromethane	1.42	Spike	P	0 - 40
2155798	Vinyl chloride	3.65	Spike	P	0 - 40
LFB	1,1-Dichloroethane	1.54	LCS	P	0 - 30
LFB	1,1-Dichloroethene	1.85	LCS	P	0 - 30
LFB	1,1,1-Trichloroethane	2.51	LCS	P	0 - 30
LFB	1,1,2-Trichloroethane	2.27	LCS	P	0 - 30
LFB	1,1,2,2-Tetrachloroethane	0.824	LCS	P	0 - 30
LFB	1,2-Dichlorobenzene	3.13	LCS	P	0 - 30
LFB	1,2-Dichloroethane	1.79	LCS	P	0 - 30
LFB	1,2-Dichloropropane	1.48	LCS	P	0 - 30
LFB	1,3-Dichlorobenzene	1.41	LCS	P	0 - 30
LFB	1,4-Dichlorobenzene	2.59	LCS	P	0 - 30
LFB	2-Butanone	2.08	LCS	P	0 - 40
LFB	Benzene	1.59	LCS	P	0 - 30
LFB	Bromodichloromethane	2.14	LCS	P	0 - 30
LFB	Bromoform	3.82	LCS	P	0 - 30
LFB	Bromomethane	2.15	LCS	P	0 - 40
LFB	Carbon tetrachloride	1.86	LCS	P	0 - 30
LFB	Chlorobenzene	3.37	LCS	P	0 - 30
LFB	Chloroethane	1.72	LCS	P	0 - 40
LFB	Chloroform	1.93	LCS	P	0 - 30
LFB	Chloromethane	2.27	LCS	P	0 - 40
LFB	cis-1,2-Dichloroethene	2.93	LCS	P	0 - 30
LFB	cis-1,3-Dichloropropene	2.53	LCS	P	0 - 30
LFB	Dibromochloromethane	3.49	LCS	P	0 - 30
LFB	Ethylbenzene	3.13	LCS	P	0 - 30
LFB	m,p-Xylene	3.29	LCS	P	0 - 30
LFB	Methyl-t-butyl ether	1.15	LCS	P	0 - 30
LFB	Methylene chloride	3.37	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8260D
 Batch ID: P378732

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	o-Xylene	3.77	LCS	P	0 - 30
LFB	Tetrachloroethene	2.83	LCS	P	0 - 30
LFB	Toluene	2.05	LCS	P	0 - 30
LFB	trans-1,2-Dichloroethene	1.39	LCS	P	0 - 30
LFB	trans-1,3-Dichloropropene	4.29	LCS	P	0 - 30
LFB	Trichloroethene	2.66	LCS	P	0 - 30
LFB	Trichlorofluoromethane	2.20	LCS	P	0 - 40
LFB	Vinyl chloride	0.691	LCS	P	0 - 40

Reference Method: EPA 8260D
 Batch ID: P378838

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155786	1,1-Dichloroethane	1.59	Spike	P	0 - 30
2155786	1,1-Dichloroethene	0.108	Spike	P	0 - 30
2155786	1,1,1-Trichloroethane	0.131	Spike	P	0 - 30
2155786	1,1,2-Trichloroethane	0.936	Spike	P	0 - 30
2155786	1,1,2,2-Tetrachloroethane	3.68	Spike	P	0 - 30
2155786	1,2-Dichlorobenzene	4.92	Spike	P	0 - 30
2155786	1,2-Dichloroethane	2.05	Spike	P	0 - 30
2155786	1,2-Dichloropropane	1.08	Spike	P	0 - 30
2155786	1,3-Dichlorobenzene	3.30	Spike	P	0 - 30
2155786	1,4-Dichlorobenzene	5.44	Spike	P	0 - 30
2155786	2-Butanone	10.4	Spike	P	0 - 30
2155786	Benzene	1.33	Spike	P	0 - 30
2155786	Bromodichloromethane	0.820	Spike	P	0 - 30
2155786	Bromoform	5.74	Spike	P	0 - 30
2155786	Bromomethane	4.61	Spike	P	0 - 30
2155786	Carbon tetrachloride	1.88	Spike	P	0 - 30
2155786	Chlorobenzene	0.797	Spike	P	0 - 30
2155786	Chloroethane	0.0445	Spike	P	0 - 30
2155786	Chloroform	0.408	Spike	P	0 - 30
2155786	Chloromethane	3.14	Spike	P	0 - 30
2155786	cis-1,2-Dichloroethene	0.0832	Spike	P	0 - 30
2155786	cis-1,3-Dichloropropene	2.42	Spike	P	0 - 30
2155786	Dibromochloromethane	2.20	Spike	P	0 - 30
2155786	Ethylbenzene	0.0219	Spike	P	0 - 30
2155786	m,p-Xylene	0.853	Spike	P	0 - 30
2155786	Methyl-t-butyl ether	3.73	Spike	P	0 - 30
2155786	Methylene chloride	0.727	Spike	P	0 - 30
2155786	o-Xylene	0.511	Spike	P	0 - 30
2155786	Tetrachloroethene	1.00	Spike	P	0 - 30
2155786	Toluene	1.45	Spike	P	0 - 30
2155786	trans-1,2-Dichloroethene	2.18	Spike	P	0 - 30
2155786	trans-1,3-Dichloropropene	1.20	Spike	P	0 - 30
2155786	Trichloroethene	0.0279	Spike	P	0 - 30
2155786	Trichlorofluoromethane	0.458	Spike	P	0 - 30
2155786	Vinyl chloride	0.977	Spike	P	0 - 30
LFB	1,1-Dichloroethane	11.3	LCS	P	0 - 30
LFB	1,1-Dichloroethene	10.0	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8260D
 Batch ID: P378838

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	1,1,1-Trichloroethane	11.1	LCS	P	0 - 30
LFB	1,1,2-Trichloroethane	4.71	LCS	P	0 - 30
LFB	1,1,2,2-Tetrachloroethane	2.46	LCS	P	0 - 30
LFB	1,2-Dichlorobenzene	9.00	LCS	P	0 - 30
LFB	1,2-Dichloroethane	9.65	LCS	P	0 - 30
LFB	1,2-Dichloropropane	11.9	LCS	P	0 - 30
LFB	1,3-Dichlorobenzene	9.07	LCS	P	0 - 30
LFB	1,4-Dichlorobenzene	8.42	LCS	P	0 - 30
LFB	2-Butanone	6.99	LCS	P	0 - 30
LFB	Benzene	12.0	LCS	P	0 - 30
LFB	Bromodichloromethane	11.7	LCS	P	0 - 30
LFB	Bromoform	5.77	LCS	P	0 - 30
LFB	Bromomethane	14.0	LCS	P	0 - 30
LFB	Carbon tetrachloride	10.4	LCS	P	0 - 30
LFB	Chlorobenzene	10.4	LCS	P	0 - 30
LFB	Chloroethane	11.0	LCS	P	0 - 30
LFB	Chloroform	12.0	LCS	P	0 - 30
LFB	Chloromethane	5.59	LCS	P	0 - 30
LFB	cis-1,2-Dichloroethene	12.8	LCS	P	0 - 30
LFB	cis-1,3-Dichloropropene	13.3	LCS	P	0 - 30
LFB	Dibromochloromethane	4.43	LCS	P	0 - 30
LFB	Ethylbenzene	10.4	LCS	P	0 - 30
LFB	m,p-Xylene	11.1	LCS	P	0 - 30
LFB	Methyl-t-butyl ether	10.6	LCS	P	0 - 30
LFB	Methylene chloride	10.8	LCS	P	0 - 30
LFB	o-Xylene	12.2	LCS	P	0 - 30
LFB	Tetrachloroethene	5.84	LCS	P	0 - 30
LFB	Toluene	15.9	LCS	P	0 - 30
LFB	trans-1,2-Dichloroethene	9.97	LCS	P	0 - 30
LFB	trans-1,3-Dichloropropene	7.25	LCS	P	0 - 30
LFB	Trichloroethene	12.5	LCS	P	0 - 30
LFB	Trichlorofluoromethane	7.63	LCS	P	0 - 30
LFB	Vinyl chloride	10.2	LCS	P	0 - 30

Reference Method: EPA 8260D
 Batch ID: P378991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156189	1,1-Dichloroethane	0.624	Spike	P	0 - 30
2156189	1,1-Dichloroethene	25.7	Spike	P	0 - 30
2156189	1,1,1-Trichloroethane	10.2	Spike	P	0 - 30
2156189	1,1,2-Trichloroethane	8.91	Spike	P	0 - 30
2156189	1,1,2,2-Tetrachloroethane	7.18	Spike	P	0 - 30
2156189	1,2-Dichlorobenzene	1.07	Spike	P	0 - 30
2156189	1,2-Dichloroethane	0.534	Spike	P	0 - 30
2156189	1,2-Dichloropropane	10.7	Spike	P	0 - 30
2156189	1,3-Dichlorobenzene	0.512	Spike	P	0 - 30
2156189	1,4-Dichlorobenzene	1.07	Spike	P	0 - 30
2156189	2-Butanone	0.628	Spike	P	0 - 30
2156189	Benzene	4.21	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8260D

Batch ID: P378991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156189	Bromodichloromethane	0.352	Spike	P	0 - 30
2156189	Bromoform	3.74	Spike	P	0 - 30
2156189	Bromomethane	28.8	Spike	P	0 - 30
2156189	Carbon tetrachloride	16.9	Spike	P	0 - 30
2156189	Chlorobenzene	4.89	Spike	P	0 - 30
2156189	Chloroethane	27.7	Spike	P	0 - 30
2156189	Chloroform	8.32	Spike	P	0 - 30
2156189	Chloromethane	25.6	Spike	P	0 - 30
2156189	cis-1,2-Dichloroethene	1.63	Spike	P	0 - 30
2156189	cis-1,3-Dichloropropene	5.71	Spike	P	0 - 30
2156189	Dibromochloromethane	2.57	Spike	P	0 - 30
2156189	Ethylbenzene	2.78	Spike	P	0 - 30
2156189	m,p-Xylene	1.80	Spike	P	0 - 30
2156189	Methyl-t-butyl ether	18.3	Spike	P	0 - 30
2156189	Methylene chloride	27.7	Spike	P	0 - 30
2156189	o-Xylene	0.934	Spike	P	0 - 30
2156189	Tetrachloroethene	1.86	Spike	P	0 - 30
2156189	Toluene	6.31	Spike	P	0 - 30
2156189	trans-1,2-Dichloroethene	20.9	Spike	P	0 - 30
2156189	trans-1,3-Dichloropropene	5.54	Spike	P	0 - 30
2156189	Trichloroethene	0.147	Spike	P	0 - 30
2156189	Trichlorofluoromethane	32.5	Spike	F	0 - 30
2156189	Vinyl chloride	27.7	Spike	P	0 - 30
LFB	1,1-Dichloroethane	1.24	LCS	P	0 - 30
LFB	1,1-Dichloroethene	1.16	LCS	P	0 - 30
LFB	1,1,1-Trichloroethane	1.33	LCS	P	0 - 30
LFB	1,1,2-Trichloroethane	2.51	LCS	P	0 - 30
LFB	1,1,2,2-Tetrachloroethane	6.71	LCS	P	0 - 30
LFB	1,2-Dichlorobenzene	4.53	LCS	P	0 - 30
LFB	1,2-Dichloroethane	1.50	LCS	P	0 - 30
LFB	1,2-Dichloropropane	1.36	LCS	P	0 - 30
LFB	1,3-Dichlorobenzene	3.91	LCS	P	0 - 30
LFB	1,4-Dichlorobenzene	4.53	LCS	P	0 - 30
LFB	2-Butanone	1.77	LCS	P	0 - 30
LFB	Benzene	1.52	LCS	P	0 - 30
LFB	Bromodichloromethane	1.46	LCS	P	0 - 30
LFB	Bromoform	0.0	LCS	P	0 - 30
LFB	Bromomethane	1.29	LCS	P	0 - 30
LFB	Carbon tetrachloride	0.662	LCS	P	0 - 30
LFB	Chlorobenzene	2.01	LCS	P	0 - 30
LFB	Chloroethane	1.75	LCS	P	0 - 30
LFB	Chloroform	1.40	LCS	P	0 - 30
LFB	Chloromethane	1.17	LCS	P	0 - 30
LFB	cis-1,2-Dichloroethene	1.19	LCS	P	0 - 30
LFB	cis-1,3-Dichloropropene	0.369	LCS	P	0 - 30
LFB	Dibromochloromethane	1.12	LCS	P	0 - 30
LFB	Ethylbenzene	2.02	LCS	P	0 - 30
LFB	m,p-Xylene	1.85	LCS	P	0 - 30
LFB	Methyl-t-butyl ether	0.0507	LCS	P	0 - 30
LFB	Methylene chloride	0.980	LCS	P	0 - 30
LFB	o-Xylene	2.37	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8260D
 Batch ID: P378991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Tetrachloroethene	2.37	LCS	P	0 - 30
LFB	Toluene	0.934	LCS	P	0 - 30
LFB	trans-1,2-Dichloroethene	1.27	LCS	P	0 - 30
LFB	trans-1,3-Dichloropropene	1.50	LCS	P	0 - 30
LFB	Trichloroethene	9.09	LCS	P	0 - 30
LFB	Trichlorofluoromethane	1.08	LCS	P	0 - 30
LFB	Vinyl chloride	0.342	LCS	P	0 - 30

Reference Method: EPA 8270E
 Batch ID: P378094

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155782	1,2,4-Trichlorobenzene	5.82	Spike	P	0 - 40
2155782	2-Chloronaphthalene	3.57	Spike	P	0 - 40
2155782	2-Chlorophenol	3.37	Spike	P	0 - 40
2155782	2-Methyl-4,6-dinitrophenol	3.90	Spike	P	0 - 40
2155782	2-Nitrophenol	4.55	Spike	P	0 - 40
2155782	2,4-Dichlorophenol	6.28	Spike	P	0 - 40
2155782	2,4-Dimethylphenol	6.44	Spike	P	0 - 40
2155782	2,4-Dinitrophenol	3.24	Spike	P	0 - 40
2155782	2,4-Dinitrotoluene	1.21	Spike	P	0 - 40
2155782	2,4,6-Trichlorophenol	5.10	Spike	P	0 - 40
2155782	2,6-Dinitrotoluene	2.80	Spike	P	0 - 40
2155782	3,3'-Dichlorobenzidine	12.7	Spike	P	0 - 40
2155782	4-Bromophenyl phenyl ether	2.59	Spike	P	0 - 40
2155782	4-Chloro-3-methylphenol	6.31	Spike	P	0 - 40
2155782	4-Chlorophenyl phenyl ether	2.39	Spike	P	0 - 40
2155782	4-Nitrophenol	2.03	Spike	P	0 - 40
2155782	Acenaphthene	3.50	Spike	P	0 - 40
2155782	Acenaphthylene	4.65	Spike	P	0 - 40
2155782	Anthracene	0.527	Spike	P	0 - 40
2155782	Azobenzene/1,2-Diphenylhydrazine	0.244	Spike	P	0 - 40
2155782	Benzo(a)anthracene	3.58	Spike	P	0 - 40
2155782	Benzo(a)pyrene	2.39	Spike	P	0 - 40
2155782	Benzo(b)fluoranthene	13.9	Spike	P	0 - 40
2155782	Benzo(g,h,i)perylene	5.62	Spike	P	0 - 40
2155782	Benzo(k)fluoranthene	18.0	Spike	P	0 - 40
2155782	Bis(2-chloroethoxy)methane	3.39	Spike	P	0 - 40
2155782	Bis(2-chloroethyl)ether	1.91	Spike	P	0 - 40
2155782	Bis(2-chloroisopropyl)ether	1.47	Spike	P	0 - 40
2155782	Bis(2-ethylhexyl)phthalate	3.44	Spike	P	0 - 40
2155782	Butyl benzyl phthalate	4.45	Spike	P	0 - 40
2155782	Chrysene	3.02	Spike	P	0 - 40
2155782	Di-n-butyl phthalate	1.53	Spike	P	0 - 40
2155782	Di-n-octyl phthalate	3.53	Spike	P	0 - 40
2155782	Dibenzo(a,h)anthracene	4.54	Spike	P	0 - 40
2155782	Diethyl phthalate	1.10	Spike	P	0 - 40
2155782	Dimethyl phthalate	2.76	Spike	P	0 - 40
2155782	Fluoranthene	1.18	Spike	P	0 - 40
2155782	Fluorene	2.62	Spike	P	0 - 40

Quality Assurance Report Precision

Reference Method: EPA 8270E
 Batch ID: P378094

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155782	Hexachlorobenzene	1.68	Spike	P	0 - 40
2155782	Hexachlorobutadiene	5.72	Spike	P	0 - 40
2155782	Hexachlorocyclopentadiene	23.0	Spike	P	0 - 40
2155782	Hexachloroethane	5.72	Spike	P	0 - 40
2155782	Indeno(1,2,3-cd)pyrene	4.16	Spike	P	0 - 40
2155782	Isophorone	4.71	Spike	P	0 - 40
2155782	N-Nitrosodi-n-propylamine	2.52	Spike	P	0 - 40
2155782	N-Nitrosodimethylamine	3.34	Spike	P	0 - 40
2155782	N-Nitrosodiphenylamine/ Diphenylamine	1.97	Spike	P	0 - 40
2155782	Naphthalene	4.57	Spike	P	0 - 40
2155782	Nitrobenzene	2.77	Spike	P	0 - 40
2155782	Pentachlorophenol	0.534	Spike	P	0 - 40
2155782	Phenanthrene	0.426	Spike	P	0 - 40
2155782	Phenol	1.83	Spike	P	0 - 40
2155782	Pyrene	5.19	Spike	P	0 - 40

Reference Method: EPA 8270E
 Batch ID: P378646

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156972	1-Methylnaphthalene	5.40	Spike	P	0 - 40
2156972	1-Naphthylamine	19.0	Spike	P	0 - 40
2156972	1,2,4-Trichlorobenzene	0.698	Spike	P	0 - 40
2156972	1,2,4,5-Tetrachlorobenzene	1.26	Spike	P	0 - 40
2156972	1,3-Dinitrobenzene	1.31	Spike	P	0 - 40
2156972	1,3,5-Trinitrobenzene	6.34	Spike	P	0 - 40
2156972	2-Acetylaminofluorene	2.49	Spike	P	0 - 40
2156972	2-Chloronaphthalene	4.25	Spike	P	0 - 40
2156972	2-Chlorophenol	1.91	Spike	P	0 - 40
2156972	2-Methyl-4,6-dinitrophenol	8.89	Spike	P	0 - 40
2156972	2-Methylnaphthalene	5.95	Spike	P	0 - 40
2156972	2-Naphthylamine	18.8	Spike	P	0 - 40
2156972	2-Nitroaniline	3.96	Spike	P	0 - 40
2156972	2-Nitrophenol	0.206	Spike	P	0 - 40
2156972	2-Picoline	13.2	Spike	P	0 - 40
2156972	2,3,4,6-Tetrachlorophenol	3.75	Spike	P	0 - 40
2156972	2,4-Dichlorophenol	5.00	Spike	P	0 - 40
2156972	2,4-Dimethylphenol	1.72	Spike	P	0 - 40
2156972	2,4-Dinitrophenol	8.36	Spike	P	0 - 40
2156972	2,4-Dinitrotoluene	2.19	Spike	P	0 - 40
2156972	2,4,5-Trichlorophenol	7.13	Spike	P	0 - 40
2156972	2,4,6-Trichlorophenol	5.14	Spike	P	0 - 40
2156972	2,6-Dichlorophenol	0.381	Spike	P	0 - 40
2156972	2,6-Dinitrotoluene	3.25	Spike	P	0 - 40
2156972	3-Methylcholanthrene	6.78	Spike	P	0 - 40
2156972	3,3'-Dichlorobenzidine	22.2	Spike	P	0 - 40
2156972	4-Aminobiphenyl	23.2	Spike	P	0 - 40
2156972	4-Bromophenyl phenyl ether	5.85	Spike	P	0 - 40
2156972	4-Chloro-3-methylphenol	1.27	Spike	P	0 - 40
2156972	4-Chlorophenyl phenyl ether	2.04	Spike	P	0 - 40

Quality Assurance Report Precision

Reference Method: EPA 8270E
 Batch ID: P378646

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156972	4-Nitrophenol	8.50	Spike	P	0 - 40
2156972	5-Nitro-o-toluidine	1.79	Spike	P	0 - 40
2156972	7,12-Dimethylbenz(a)anthracene	2.53	Spike	P	0 - 40
2156972	Acenaphthene	3.89	Spike	P	0 - 40
2156972	Acenaphthylene	3.72	Spike	P	0 - 40
2156972	Acetophenone	8.10	Spike	P	0 - 40
2156972	Aniline	4.98	Spike	P	0 - 40
2156972	Anthracene	3.28	Spike	P	0 - 40
2156972	Azobenzene/1,2-Diphenylhydrazine	0.104	Spike	P	0 - 40
2156972	Benzo(a)anthracene	0.914	Spike	P	0 - 40
2156972	Benzo(a)pyrene	4.77	Spike	P	0 - 40
2156972	Benzo(b)fluoranthene	3.79	Spike	P	0 - 40
2156972	Benzo(g,h,i)perylene	4.78	Spike	P	0 - 40
2156972	Benzo(k)fluoranthene	4.77	Spike	P	0 - 40
2156972	Benzyl alcohol	1.31	Spike	P	0 - 40
2156972	Bis(2-chloroethoxy)methane	0.452	Spike	P	0 - 40
2156972	Bis(2-chloroethyl)ether	5.24	Spike	P	0 - 40
2156972	Bis(2-chloroisopropyl)ether	4.75	Spike	P	0 - 40
2156972	Bis(2-ethylhexyl)phthalate	2.09	Spike	P	0 - 40
2156972	Butyl benzyl phthalate	0.188	Spike	P	0 - 40
2156972	Carbazole	0.184	Spike	P	0 - 40
2156972	Chrysene	0.534	Spike	P	0 - 40
2156972	Di-n-butyl phthalate	2.97	Spike	P	0 - 40
2156972	Di-n-octyl phthalate	4.21	Spike	P	0 - 40
2156972	Dibenzo(a,h)anthracene	5.31	Spike	P	0 - 40
2156972	Dibenzofuran	4.82	Spike	P	0 - 40
2156972	Diethyl phthalate	4.02	Spike	P	0 - 40
2156972	Dimethyl phthalate	3.80	Spike	P	0 - 40
2156972	Dimethylaminoazobenzene	2.87	Spike	P	0 - 40
2156972	Dinoseb	2.13	Spike	P	0 - 40
2156972	Ethyl methanesulfonate	7.97	Spike	P	0 - 40
2156972	Fluoranthene	4.11	Spike	P	0 - 40
2156972	Fluorene	4.10	Spike	P	0 - 40
2156972	Hexachlorobenzene	3.60	Spike	P	0 - 40
2156972	Hexachlorobutadiene	0.124	Spike	P	0 - 40
2156972	Hexachlorocyclopentadiene	22.2	Spike	P	0 - 40
2156972	Hexachloroethane	0.229	Spike	P	0 - 40
2156972	Hexachloropropene	4.31	Spike	P	0 - 40
2156972	Indeno(1,2,3-cd)pyrene	4.66	Spike	P	0 - 40
2156972	Isophorone	0.224	Spike	P	0 - 40
2156972	Isosafrole	2.09	Spike	P	0 - 40
2156972	m,p-Cresols	4.77	Spike	P	0 - 40
2156972	N-Nitrosodi-n-butylamine	2.79	Spike	P	0 - 40
2156972	N-Nitrosodi-n-propylamine	7.34	Spike	P	0 - 40
2156972	N-Nitrosodiethylamine	7.01	Spike	P	0 - 40
2156972	N-Nitrosodimethylamine	2.06	Spike	P	0 - 40
2156972	N-Nitrosomethylethylamine	9.82	Spike	P	0 - 40
2156972	N-Nitrosomorpholine	6.37	Spike	P	0 - 40
2156972	N-Nitrosopiperidine	7.55	Spike	P	0 - 40
2156972	N-Nitrosopyrrolidine	5.36	Spike	P	0 - 40
2156972	Naphthalene	0.224	Spike	P	0 - 40

Quality Assurance Report Precision

Reference Method: EPA 8270E
 Batch ID: P378646

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156972	Nitrobenzene	0.630	Spike	P	0 - 40
2156972	o-Cresol	2.07	Spike	P	0 - 40
2156972	o-Toluidine	3.91	Spike	P	0 - 40
2156972	Pentachlorobenzene	4.79	Spike	P	0 - 40
2156972	Pentachloroethane	7.42	Spike	P	0 - 40
2156972	Pentachloronitrobenzene	0.733	Spike	P	0 - 40
2156972	Pentachlorophenol	3.81	Spike	P	0 - 40
2156972	Phenacetin	0.746	Spike	P	0 - 40
2156972	Phenanthrene	4.25	Spike	P	0 - 40
2156972	Phenol	1.36	Spike	P	0 - 40
2156972	Pyrene	0.404	Spike	P	0 - 40
2156972	Pyridine	3.71	Spike	P	0 - 40
2156972	Safrole	2.09	Spike	P	0 - 40

Reference Method: EPA 8321B
 Batch ID: P378518

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155846	4:2 Fluorotelomer sulfonate (4:2 FTS)	11.1	Spike	P	0 - 35
2155846	6:2 Fluorotelomer sulfonate (6:2 FTS)	11.4	Spike	P	0 - 35
2155846	8:2 Fluorotelomer sulfonate (8:2 FTS)	8.13	Spike	P	0 - 35
2155846	N-Et perfluorooctanesulfonamidoAc acid	7.67	Spike	P	0 - 35
2155846	N-Me perfluorooctanesulfonamidoAc acid	0.456	Spike	P	0 - 35
2155846	Perfluorobutanesulfonic acid (PFBS)	0.0752	Spike	P	0 - 35
2155846	Perfluorodecanesulfonic acid (PFDS)	13.0	Spike	P	0 - 35
2155846	Perfluorodecanoic acid (PFDA)	26.9	Spike	P	0 - 35
2155846	Perfluorododecanoic acid (PFDoA)	14.8	Spike	P	0 - 35
2155846	Perfluoroheptanesulfonic acid (PFHpS)	18.3	Spike	P	0 - 35
2155846	Perfluoroheptanoic acid (PFHpA)	5.54	Spike	P	0 - 35
2155846	Perfluorohexanesulfonic acid (PFHxS)	7.66	Spike	P	0 - 35
2155846	Perfluorohexanoic acid (PFHxA)	10.3	Spike	P	0 - 35
2155846	Perfluorononanesulfonic acid (PFNS)	0.126	Spike	P	0 - 35
2155846	Perfluorononanoic acid (PFNA)	37.5	Spike	F	0 - 35
2155846	Perfluorooctanesulfonic acid (PFOS)	3.67	Spike	P	0 - 35
2155846	Perfluorooctanoic acid (PFOA)	4.52	Spike	P	0 - 35
2155846	Perfluoropentanesulfonic acid (PFPeS)	5.47	Spike	P	0 - 35
2155846	Perfluoropentanoic acid (PFPeA)	13.8	Spike	P	0 - 35
2155846	Perfluorotetradecanoic acid (PFTeA)	3.79	Spike	P	0 - 35
2155846	Perfluorotridecanoic acid (PFTriA)	1.96	Spike	P	0 - 35
2155846	Perfluoroundecanoic acid (PFUnA)	36.7	Spike	F	0 - 35

Reference Method: EPA 8321B
 Batch ID: P378552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155815	4:2 Fluorotelomer sulfonate (4:2 FTS)	7.17	Spike	P	0 - 30
2155815	6:2 Fluorotelomer sulfonate (6:2 FTS)	8.28	Spike	P	0 - 30
2155815	8:2 Fluorotelomer sulfonate (8:2 FTS)	26.1	Spike	P	0 - 30
2155815	Hexafluoropropylene oxide dimer acid	33.8	Spike	F	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P378552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155815	N-Et perfluorooctanesulfonamidoAc acid	22.7	Spike	P	0 - 30
2155815	N-Me perfluorooctanesulfonamidoAc acid	16.0	Spike	P	0 - 30
2155815	Perfluorobutanesulfonic acid (PFBS)	5.27	Spike	P	0 - 30
2155815	Perfluorodecanesulfonic acid (PFDS)	33.7	Spike	F	0 - 30
2155815	Perfluorodecanoic acid (PFDA)	31.7	Spike	F	0 - 30
2155815	Perfluorododecanoic acid (PFDoA)	32.3	Spike	F	0 - 30
2155815	Perfluoroheptanesulfonic acid (PFHpS)	24.0	Spike	P	0 - 30
2155815	Perfluoroheptanoic acid (PFHpA)	8.45	Spike	P	0 - 30
2155815	Perfluorohexanesulfonic acid (PFHxS)	32.6	Spike	F	0 - 30
2155815	Perfluorohexanoic acid (PFHxA)	29.7	Spike	P	0 - 30
2155815	Perfluorononanesulfonic acid (PFNS)	38.1	Spike	F	0 - 30
2155815	Perfluorononanoic acid (PFNA)	21.5	Spike	P	0 - 30
2155815	Perfluorooctanesulfonic acid (PFOS)	19.9	Spike	P	0 - 30
2155815	Perfluorooctanoic acid (PFOA)	8.16	Spike	P	0 - 30
2155815	Perfluoropentanesulfonic acid (PFPeS)	13.6	Spike	P	0 - 30
2155815	Perfluoropentanoic acid (PFPeA)	3.02	Spike	P	0 - 30
2155815	Perfluorotetradecanoic acid (PFTeA)	29.0	Spike	P	0 - 30
2155815	Perfluorotridecanoic acid (PFTriA)	20.3	Spike	P	0 - 30
2155815	Perfluoroundecanoic acid (PFUnA)	25.4	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2155782
Field Sample ID: Soil Drum Sample

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	2-Fluorobiphenyl	67.0	P	30 - 150
EPA 8270E	2-Fluorophenol	60.4	P	20 - 150
EPA 8270E	2,4,6-Tribromophenol	80.8	P	30 - 150
EPA 8270E	Nitrobenzene-d5	60.4	P	30 - 150
EPA 8270E	Phenol-d5	60.4	P	20 - 150
EPA 8270E	Terphenyl-d14	72.2	P	30 - 150

Lab Sample ID: 2155785
Field Sample ID: Soil Drum Sample

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Hexafluoropropylene oxide dimer acid-13C	89.0	P	30 - 160
EPA 8321B	Perfluorobutanesulfonate-13C	117	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	116	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	109	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	102	P	30 - 160

Lab Sample ID: 2155786
Field Sample ID: Soil Drum Sample

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8260D	1,2-Dichloroethane-d4	107	P	70 - 130
EPA 8260D	1,4-Dichlorobenzene-d4	103	P	70 - 130
EPA 8260D	Dibromofluoromethane	104	P	70 - 130
EPA 8260D	Toluene-d8	91.2	P	70 - 130

Lab Sample ID: 2155787
Field Sample ID: Water Drum Sample

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	2-Fluorobiphenyl	60.0	P	30 - 150
EPA 8270E	2-Fluorophenol	41.4	P	20 - 150
EPA 8270E	2,4,6-Tribromophenol	39.0	P	30 - 150
EPA 8270E	Nitrobenzene-d5	52.2	P	30 - 150
EPA 8270E	Phenol-d5	35.0	P	20 - 150
EPA 8270E	Terphenyl-d14	45.8	P	30 - 150

Lab Sample ID: 2155790
Field Sample ID: Water Drum Sample

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Hexafluoropropylene oxide dimer acid-13C	69.7	P	30 - 160
EPA 8321B	Perfluorobutanesulfonate-13C	83.9	P	30 - 160
EPA 8321B	Perfluorodecanoic acid-13C	32.9	P	30 - 160
EPA 8321B	Perfluorohexanesulfonate-13C	101	P	30 - 160
EPA 8321B	Perfluorohexanoic acid-13C	58.5	P	30 - 160

Lab Sample ID: 2155791
Field Sample ID: Water Drum Sample

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8260D	1,2-Dichloroethane-d4	106	P	70 - 130

Quality Assurance Report Surrogates

Lab Sample ID: 2155791
Field Sample ID: Water Drum Sample

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8260D	1,4-Dichlorobenzene-d4	90.8	P	70 - 130
EPA 8260D	Dibromofluoromethane	107	P	70 - 130
EPA 8260D	Toluene-d8	95.0	P	70 - 130

Lab Sample ID: 2155792
Field Sample ID: TRIP BLANK

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8260D	1,2-Dichloroethane-d4	108	P	70 - 130
EPA 8260D	1,4-Dichlorobenzene-d4	100	P	70 - 130
EPA 8260D	Dibromofluoromethane	104	P	70 - 130
EPA 8260D	Toluene-d8	94.2	P	70 - 130

Quality Assurance Report Calibration Verification

Reference Method: EPA 8260D
Run ID: A97459
Included Lab Sample IDs: 2155792

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
1,1-Dichloroethane	107		P	80 - 120
1,1-Dichloroethene	105		P	80 - 120
1,1,1-Trichloroethane	104		P	80 - 120
1,1,2-Trichloroethane	108		P	80 - 120
1,1,2,2-Tetrachloroethane	108		P	80 - 120
1,2-Dichlorobenzene	98.6		P	80 - 120
1,2-Dichloroethane	108		P	80 - 120
1,2-Dichloropropane	106		P	80 - 120
1,3-Dichlorobenzene	97.3		P	80 - 120
1,4-Dichlorobenzene	100		P	80 - 120
2-Butanone	106		P	70 - 130
Benzene	108		P	80 - 120
Bromodichloromethane	105		P	80 - 120
Bromoform	93.8		P	80 - 120
Bromomethane	95.3		P	70 - 130
Carbon tetrachloride	107		P	80 - 120
Chlorobenzene	101		P	80 - 120
Chloroethane	97.0		P	70 - 130
Chloroform	109		P	80 - 120
Chloromethane	96.4		P	70 - 130
cis-1,2-Dichloroethene	103		P	80 - 120
cis-1,3-Dichloropropene	96.0		P	80 - 120
Dibromochloromethane	103		P	80 - 120
Ethylbenzene	101		P	80 - 120
m,p-Xylene	106		P	80 - 120
Methyl-t-butyl ether	99.0		P	80 - 120
Methylene chloride	106		P	80 - 120
o-Xylene	102		P	80 - 120
Tetrachloroethene	106		P	80 - 120
Toluene	106		P	80 - 120
trans-1,2-Dichloroethene	105		P	80 - 120
trans-1,3-Dichloropropene	95.8		P	80 - 120
Trichloroethene	105		P	80 - 120
Trichlorofluoromethane	109		P	70 - 130
Vinyl chloride	101		P	70 - 130

Reference Method: EPA 6020A
Run ID: A97494
Included Lab Sample IDs: 2155784

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	96.0	96.5	P/P	90 - 110
Barium	94.1	94.6	P/P	90 - 110
Cadmium	93.6	93.1	P/P	90 - 110
Lead	96.2	95.2	P/P	90 - 110
Selenium	95.7	96.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8260D
Run ID: A97518
Included Lab Sample IDs: 2155786

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
1,1-Dichloroethane	105		P	70 - 130
1,1-Dichloroethene	103		P	70 - 130
1,1,1-Trichloroethane	103		P	70 - 130
1,1,2-Trichloroethane	108		P	70 - 130
1,1,2,2-Tetrachloroethane	107		P	70 - 130
1,2-Dichlorobenzene	97.6		P	70 - 130
1,2-Dichloroethane	103		P	70 - 130
1,2-Dichloropropane	98.4		P	70 - 130
1,3-Dichlorobenzene	97.3		P	70 - 130
1,4-Dichlorobenzene	102		P	70 - 130
2-Butanone	89.8		P	70 - 130
Benzene	101		P	70 - 130
Bromodichloromethane	101		P	70 - 130
Bromoform	104		P	70 - 130
Bromomethane	98.8		P	70 - 130
Carbon tetrachloride	104		P	70 - 130
Chlorobenzene	105		P	70 - 130
Chloroethane	103		P	70 - 130
Chloroform	106		P	70 - 130
Chloromethane	99.6		P	70 - 130
cis-1,2-Dichloroethene	97.0		P	70 - 130
cis-1,3-Dichloropropene	89.3		P	70 - 130
Dibromochloromethane	102		P	70 - 130
Ethylbenzene	102		P	70 - 130
m,p-Xylene	105		P	70 - 130
Methyl-t-butyl ether	100		P	70 - 130
Methylene chloride	105		P	70 - 130
o-Xylene	100		P	70 - 130
Tetrachloroethene	104		P	70 - 130
Toluene	102		P	70 - 130
trans-1,2-Dichloroethene	105		P	70 - 130
trans-1,3-Dichloropropene	99.3		P	70 - 130
Trichloroethene	100		P	70 - 130
Trichlorofluoromethane	106		P	70 - 130
Vinyl chloride	103		P	70 - 130

Reference Method: EPA 6020A
Run ID: A97532
Included Lab Sample IDs: 2155784

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	94.0	93.7	P/P	90 - 110
Silver	106	105	P/P	90 - 110

Reference Method: EPA 7473
Run ID: A97551
Included Lab Sample IDs: 2155783

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Mercury	103	99.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A97565
Included Lab Sample IDs: 2155785

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	92.2	86.0	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	75.6	60.1	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	97.4	99.3	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	85.9	91.6	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	92.7	82.5	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	89.9	81.3	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	91.8	96.1	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	94.7	98.7	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	110	125	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	89.0	94.2	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	89.8	63.2	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	84.6	77.5	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	84.2	94.5	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	85.0	68.5	P/P	60 - 160
Perfluorononanoic acid (PFNA)	94.3	108	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	87.9	73.3	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	112	65.1	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	87.8	83.2	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	91.5	87.7	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	79.8	93.3	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	85.0	88.3	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	91.1	65.9	P/P	60 - 160

Reference Method: EPA 8260D
Run ID: A97570
Included Lab Sample IDs: 2155791

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
1,1-Dichloroethane	102		P	80 - 120
1,1-Dichloroethene	99.0		P	80 - 120
1,1,1-Trichloroethane	103		P	80 - 120
1,1,2-Trichloroethane	107		P	80 - 120
1,1,2,2-Tetrachloroethane	110		P	80 - 120
1,2-Dichlorobenzene	89.0		P	80 - 120
1,2-Dichloroethane	113		P	80 - 120
1,2-Dichloropropane	104		P	80 - 120
1,3-Dichlorobenzene	92.0		P	80 - 120
1,4-Dichlorobenzene	89.1		P	80 - 120
2-Butanone	88.1		P	70 - 120
Benzene	110		P	80 - 120
Bromodichloromethane	107		P	80 - 120
Bromoform	87.8		P	80 - 120
Bromomethane	87.2		P	70 - 130
Carbon tetrachloride	107		P	80 - 120
Chlorobenzene	110		P	80 - 120
Chloroethane	84.3		P	70 - 130
Chloroform	109		P	80 - 120
Chloromethane	80.6		P	70 - 130
cis-1,2-Dichloroethene	101		P	80 - 120
cis-1,3-Dichloropropene	95.6		P	80 - 120
Dibromochloromethane	101		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8260D
Run ID: A97570
Included Lab Sample IDs: 2155791

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ethylbenzene	111		P	80 - 120
m,p-Xylene	114		P	80 - 120
Methyl-t-butyl ether	96.4		P	80 - 120
Methylene chloride	100		P	80 - 120
o-Xylene	95.7		P	80 - 120
Tetrachloroethene	104		P	80 - 120
Toluene	112		P	80 - 120
trans-1,2-Dichloroethene	102		P	80 - 120
trans-1,3-Dichloropropene	89.4		P	80 - 120
Trichloroethene	110		P	80 - 120
Trichlorofluoromethane	82.1		P	70 - 130
Vinyl chloride	76.8		P	70 - 130

Reference Method: EPA 8270E
Run ID: A97604
Included Lab Sample IDs: 2155787

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
1-Methylnaphthalene	93.1		P	70 - 130
1,2,4-Trichlorobenzene	91.9		P	70 - 130
1,2,4,5-Tetrachlorobenzene	92.1		P	70 - 130
1,3-Dinitrobenzene	84.9		P	70 - 130
1,3,5-Trinitrobenzene	97.0		P	70 - 130
2-Chloronaphthalene	95.5		P	70 - 130
2-Chlorophenol	105		P	70 - 130
2-Methylnaphthalene	90.7		P	70 - 130
2-Nitroaniline	86.7		P	70 - 130
2-Nitrophenol	85.6		P	70 - 130
2,3,4,6-Tetrachlorophenol	87.7		P	70 - 130
2,4-Dichlorophenol	76.0		P	70 - 130
2,4-Dimethylphenol	85.0		P	70 - 130
2,4-Dinitrotoluene	90.0		P	70 - 130
2,4,5-Trichlorophenol	96.6		P	70 - 130
2,4,6-Trichlorophenol	82.4		P	70 - 130
2,6-Dichlorophenol	88.2		P	70 - 130
2,6-Dinitrotoluene	94.9		P	70 - 130
3-Methylcholanthrene	99.6		P	70 - 130
4-Bromophenyl phenyl ether	93.1		P	70 - 130
4-Chloro-3-methylphenol	80.9		P	70 - 130
4-Chlorophenyl phenyl ether	95.2		P	70 - 130
5-Nitro-o-toluidine	86.1		P	70 - 130
7,12-Dimethylbenz(a)anthracene	86.4		P	70 - 130
Acenaphthene	96.3		P	70 - 130
Acenaphthylene	99.9		P	70 - 130
Acetophenone	92.1		P	70 - 130
Anthracene	95.1		P	70 - 130
Azobenzene/1,2-Diphenylhydrazine	96.0		P	70 - 130
Benzo(a)anthracene	90.0		P	70 - 130
Benzo(a)pyrene	101		P	70 - 130
Benzo(b)fluoranthene	90.4		P	70 - 130
Benzo(g,h,i)perylene	98.5		P	70 - 130

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A97604
Included Lab Sample IDs: 2155787

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Benzo(k)fluoranthene	103		P	70 - 130
Benzyl alcohol	70.8		P	70 - 130
Bis(2-chloroethoxy)methane	88.7		P	70 - 130
Bis(2-chloroethyl)ether	100		P	70 - 130
Bis(2-chloroisopropyl)ether	96.2		P	70 - 130
Carbazole	87.2		P	70 - 130
Chrysene	97.7		P	70 - 130
Di-n-octyl phthalate	113		P	70 - 130
Dibenzo(a,h)anthracene	92.5		P	70 - 130
Dibenzofuran	96.0		P	70 - 130
Dimethyl phthalate	94.2		P	70 - 130
Dimethylaminoazobenzene	104		P	70 - 130
Fluoranthene	93.9		P	70 - 130
Fluorene	96.3		P	70 - 130
Hexachlorobenzene	91.1		P	70 - 130
Hexachlorobutadiene	92.2		P	70 - 130
Hexachlorocyclopentadiene	121		P	70 - 130
Hexachloroethane	97.2		P	70 - 130
Hexachloropropene	99.9		P	70 - 130
Indeno(1,2,3-cd)pyrene	95.2		P	70 - 130
Isophorone	92.7		P	70 - 130
Isosafrole	91.5		P	70 - 130
m,p-Cresols	72.1		P	70 - 130
N-Nitrosodi-n-butylamine	95.5		P	70 - 130
N-Nitrosodi-n-propylamine	94.5		P	70 - 130
N-Nitrosomorpholine	96.2		P	70 - 130
N-Nitrosopiperidine	96.7		P	70 - 130
N-Nitrosopyrrolidine	89.6		P	70 - 130
Naphthalene	95.7		P	70 - 130
Nitrobenzene	92.1		P	70 - 130
o-Cresol	90.4		P	70 - 130
o-Toluidine	100		P	70 - 130
Pentachlorobenzene	93.2		P	70 - 130
Pentachloroethane	97.3		P	70 - 130
Pentachloronitrobenzene	103		P	70 - 130
Phenacetin	89.1		P	70 - 130
Phenanthrene	86.7		P	70 - 130
Phenol	102		P	70 - 130
Pyrene	95.7		P	70 - 130
Safrole	96.0		P	70 - 130

Reference Method: EPA 8270E
Run ID: A97614
Included Lab Sample IDs: 2155787

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
1-Naphthylamine	76.9		P	60 - 130
2-Acetylaminofluorene	99.0		P	70 - 150
2-Methyl-4,6-dinitrophenol	124		P	70 - 130
2-Naphthylamine	70.4		P	60 - 130
2-Picoline	117		P	70 - 130

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A97614
Included Lab Sample IDs: 2155787

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-Dinitrophenol	92.5		P	70 - 130
3,3'-Dichlorobenzidine	97.6		P	50 - 130
4-Aminobiphenyl	85.2		P	70 - 130
4-Nitrophenol	92.1		P	70 - 130
Aniline	94.2		P	70 - 130
Benzidine	38.4*		F	50 - 130
Bis(2-ethylhexyl)phthalate	109		P	70 - 130
Butyl benzyl phthalate	111		P	70 - 130
Di-n-butyl phthalate	114		P	70 - 130
Diethyl phthalate	115		P	70 - 130
Dinoseb	128		P	70 - 130
Ethyl methanesulfonate	99.0		P	70 - 130
N-Nitrosodiethylamine	105		P	70 - 130
N-Nitrosodimethylamine	114		P	70 - 130
N-Nitrosomethylethylamine	113		P	70 - 130
Pentachlorophenol	118		P	70 - 130
Pyridine	120		P	70 - 130

Reference Method: EPA 7473
Run ID: A97620
Included Lab Sample IDs: 2155788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Mercury	97.4	102	P/P	80 - 120

Reference Method: EPA 8270E
Run ID: A97628
Included Lab Sample IDs: 2155782

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
1,2,4-Trichlorobenzene	102		P	70 - 130
2-Chloronaphthalene	102		P	70 - 130
2-Chlorophenol	108		P	70 - 130
2-Methyl-4,6-dinitrophenol	115		P	70 - 130
2-Nitrophenol	109		P	70 - 130
2,4-Dichlorophenol	108		P	70 - 130
2,4-Dimethylphenol	104		P	70 - 130
2,4-Dinitrophenol	113		P	70 - 130
2,4-Dinitrotoluene	99.6		P	70 - 130
2,4,6-Trichlorophenol	96.8		P	70 - 130
2,6-Dinitrotoluene	110		P	70 - 130
3,3'-Dichlorobenzidine	86.2		P	50 - 130
4-Bromophenyl phenyl ether	98.1		P	70 - 130
4-Chloro-3-methylphenol	109		P	70 - 130
4-Chlorophenyl phenyl ether	102		P	70 - 130
4-Nitrophenol	90.6		P	70 - 130
Acenaphthene	98.5		P	70 - 130
Acenaphthylene	100		P	70 - 130
Anthracene	98.3		P	70 - 130
Azobenzene/1,2-Diphenylhydrazine	94.6		P	70 - 130
Benzidine	34.6*		F	50 - 130

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A97628
Included Lab Sample IDs: 2155782

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Benzo(a)anthracene	98.7		P	70 - 130
Benzo(a)pyrene	101		P	70 - 130
Benzo(b)fluoranthene	101		P	70 - 130
Benzo(g,h,i)perylene	106		P	70 - 130
Benzo(k)fluoranthene	95.2		P	70 - 130
Bis(2-chloroethoxy)methane	101		P	70 - 130
Bis(2-chloroethyl)ether	112		P	70 - 130
Bis(2-chloroisopropyl)ether	72.4		P	70 - 130
Bis(2-ethylhexyl)phthalate	103		P	70 - 130
Butyl benzyl phthalate	102		P	70 - 130
Chrysene	98.2		P	70 - 130
Di-n-butyl phthalate	97.2		P	70 - 130
Di-n-octyl phthalate	103		P	70 - 130
Dibenzo(a,h)anthracene	102		P	70 - 130
Diethyl phthalate	94.2		P	70 - 130
Dimethyl phthalate	105		P	70 - 130
Fluoranthene	96.5		P	70 - 130
Fluorene	93.6		P	70 - 130
Hexachlorobenzene	98.2		P	70 - 130
Hexachlorobutadiene	98.0		P	70 - 130
Hexachlorocyclopentadiene	120		P	70 - 130
Hexachloroethane	103		P	70 - 130
Indeno(1,2,3-cd)pyrene	103		P	70 - 130
Isophorone	98.1		P	70 - 130
N-Nitrosodi-n-propylamine	98.5		P	70 - 130
N-Nitrosodimethylamine	80.4		P	70 - 130
N-Nitrosodiphenylamine/ Diphenylamine	95.3		P	70 - 130
Naphthalene	101		P	70 - 130
Nitrobenzene	94.9		P	70 - 130
Pentachlorophenol	95.1		P	70 - 130
Phenanthrene	98.0		P	70 - 130
Phenol	104		P	70 - 130
Pyrene	97.8		P	70 - 130

Reference Method: EPA 6020A
Run ID: A97637
Included Lab Sample IDs: 2155789

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	102	102	P/P	90 - 110
Barium	101	101	P/P	90 - 110
Cadmium	96.3	96.5	P/P	90 - 110
Chromium	100	96.3	P/P	90 - 110
Lead	92.6	94.2	P/P	90 - 110
Selenium	100	98.6	P/P	90 - 110
Silver	98.6	98.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A97642
Included Lab Sample IDs: 2155790

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
4:2 Fluorotelomer sulfonate (4:2 FTS)	89.5	96.3	P/P	60 - 160
6:2 Fluorotelomer sulfonate (6:2 FTS)	143	108	P/P	60 - 160
8:2 Fluorotelomer sulfonate (8:2 FTS)	108	109	P/P	60 - 160
Hexafluoropropylene oxide dimer acid	128	91.3	P/P	60 - 160
N-Et perfluorooctanesulfonamidoAc acid	104	98.2	P/P	60 - 160
N-Me perfluorooctanesulfonamidoAc acid	99.1	95.7	P/P	60 - 160
Perfluorobutanesulfonic acid (PFBS)	89.3	84.5	P/P	60 - 160
Perfluorodecanesulfonic acid (PFDS)	92.6	85.5	P/P	60 - 160
Perfluorodecanoic acid (PFDA)	98.7	83.6	P/P	60 - 160
Perfluorododecanoic acid (PFDoA)	106	72.7	P/P	60 - 160
Perfluoroheptanesulfonic acid (PFHpS)	78.5	75.6	P/P	60 - 160
Perfluoroheptanoic acid (PFHpA)	116	102	P/P	60 - 160
Perfluorohexanesulfonic acid (PFHxS)	140	121	P/P	60 - 160
Perfluorohexanoic acid (PFHxA)	91.6	90.6	P/P	60 - 160
Perfluorononanesulfonic acid (PFNS)	141	118	P/P	60 - 160
Perfluorononanoic acid (PFNA)	82.9	96.7	P/P	60 - 160
Perfluorooctanesulfonic acid (PFOS)	130	107	P/P	60 - 160
Perfluorooctanoic acid (PFOA)	85.7	99.4	P/P	60 - 160
Perfluoropentanesulfonic acid (PFPeS)	87.1	78.7	P/P	60 - 160
Perfluoropentanoic acid (PFPeA)	116	89.3	P/P	60 - 160
Perfluorotetradecanoic acid (PFTeA)	102	98.0	P/P	60 - 160
Perfluorotridecanoic acid (PFTriA)	104	81.1	P/P	60 - 160
Perfluoroundecanoic acid (PFUnA)	93.3	124	P/P	60 - 160

* Pass/Fail determinations are made for each bracketing calibration verification check.
 Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
 Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			Precision SMP	MS	
						LCS			
EPA 6020A	Arsenic	98.2		101	97.7			3.60	
	Arsenic	103		103	106	108		2.36	
	Barium	99.2		122	97.9			18.4	
	Barium	102		102	103	102		1.48	
	Cadmium	94.4		101	95.6			5.39	
	Cadmium	102		103	105	104		2.04	
	Chromium	98.3		96.7	97.4			0.767	
	Chromium	98.2		97.6	99.9	99.8		2.25	
	Lead	101		107	101			4.91	
	Lead	98.6		97.6	98.5	99.3		0.946	
	Selenium	94.2		98.4	94.5			4.02	
	Selenium	101		101	103	104		1.58	
	Silver	112		109	109			0.0157	
	Silver	104		103	104	103		1.17	
	EPA 7473	Mercury	98.4		95.1	95.1			0.0063
		Mercury	102		101	102			0.390
EPA 8260D	1,1-Dichloroethane	104	103	98.6	101		1.54	2.70	
	1,1-Dichloroethane	98.9	111	111	110		11.3	1.59	
	1,1-Dichloroethane	104	105	104	105		1.24	0.624	
	1,1-Dichloroethene	98.0	96.2	93.2	95.3		1.85	2.28	
	1,1-Dichloroethene	106	117	120	120		10.0	0.108	
	1,1-Dichloroethene	107	108	100	130		1.16	25.7	
	1,1,1-Trichloroethane	98.8	96.3	93.2	94.6		2.51	1.49	
	1,1,1-Trichloroethane	102	114	114	114		11.1	0.131	
	1,1,1-Trichloroethane	109	110	110	122		1.33	10.2	
	1,1,2-Trichloroethane	102	105	103	105		2.27	2.07	
	1,1,2-Trichloroethane	104	109	96.6	95.7		4.71	0.936	
	1,1,2-Trichloroethane	102	105	106	96.5		2.51	8.91	
	1,1,2,2-Tetrachloroethane	97.5	96.7	96.4	97.6		0.824	1.34	
	1,1,2,2-Tetrachloroethane	107	110	85.7	88.9		2.46	3.68	
	1,1,2,2-Tetrachloroethane	126	118	138	129		6.71	7.18	
	1,2-Dichlorobenzene	97.4	94.4	86.4	91.5		3.13	5.68	
	1,2-Dichlorobenzene	93.5	102	63.2	60.1		9.00	4.92	
	1,2-Dichlorobenzene	91.6	95.8	98.4	97.4		4.53	1.07	
	1,2-Dichloroethane	104	102	97.4	100		1.79	2.74	
	1,2-Dichloroethane	98.7	109	99.2	101		9.65	2.05	
	1,2-Dichloroethane	113	114	112	113		1.50	0.534	
	1,2-Dichloropropane	106	104	100	103		1.48	2.99	
	1,2-Dichloropropane	91.5	103	96.2	97.2		11.9	1.08	
	1,2-Dichloropropane	102	103	102	91.4		1.36	10.7	
	1,3-Dichlorobenzene	96.6	95.3	89.2	94.1		1.41	5.29	
	1,3-Dichlorobenzene	93.5	102	66.6	64.4		9.07	3.30	
	1,3-Dichlorobenzene	92.7	96.4	97.9	97.4		3.91	0.512	
	1,4-Dichlorobenzene	99.8	97.2	89.9	95.1		2.59	5.62	
	1,4-Dichlorobenzene	99.5	108	71.6	67.8		8.42	5.44	
	1,4-Dichlorobenzene	91.6	95.9	98.5	97.4		4.53	1.07	
	2-Butanone	101	99.0	104	109		2.08	4.74	
	2-Butanone	89.4	95.9	75.9	84.2		6.99	10.4	
2-Butanone	93.2	94.9	79.9	79.4		1.77	0.628		
Benzene	105	103	98.8	102		1.59	2.89		
Benzene	96.4	109	105	104		12.0	1.33		
Benzene	111	113	113	108		1.52	4.21		
Bromodichloromethane	96.6	94.6	89.8	93.4		2.14	3.87		
Bromodichloromethane	97.9	110	101	102		11.7	0.820		

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision	MS
							SMP	
EPA 8260D	Bromodichloromethane	112	114	114	113	1.46		0.352
	Bromoform	90.8	87.4	85.4	87.8	3.82		2.77
	Bromoform	101	107	83.2	88.2	5.77		5.74
	Bromoform	90.3	90.3	84.0	87.2	0.0		3.74
	Bromomethane	96.2	94.2	91.8	94.8	2.15		3.16
	Bromomethane	94.0	108	75.2	78.8	14.0		4.61
	Bromomethane	93.4	92.2	87.6	117	1.29		28.8
	Carbon tetrachloride	106	104	99.2	101	1.86		2.04
	Carbon tetrachloride	98.5	109	106	108	10.4		1.88
	Carbon tetrachloride	105	106	105	124	0.662		16.9
	Chlorobenzene	99.6	96.2	94.0	97.7	3.37		3.91
	Chlorobenzene	97.3	108	90.6	89.9	10.4		0.797
	Chlorobenzene	108	111	110	105	2.01		4.89
	Chloroethane	96.8	95.2	90.9	94.7	1.72		4.09
	Chloroethane	98.7	110	112	112	11.0		0.0445
	Chloroethane	89.3	87.8	83.8	111	1.75		27.7
	Chloroform	102	100	96.0	98.9	1.93		3.03
	Chloroform	102	116	110	110	12.0		0.408
	Chloroform	113	115	114	124	1.40		8.32
	Chloromethane	100	98.2	101	112	2.27		10.3
	Chloromethane	101	107	92.5	95.5	5.59		3.14
	Chloromethane	86.2	85.2	84.0	109	1.17		25.6
	cis-1,2-Dichloroethene	104	101	77.2	88.0	2.93		3.07
	cis-1,2-Dichloroethene	90.6	103	96.2	96.1	12.8		0.0832
	cis-1,2-Dichloroethene	100	101	101	102	1.19		1.63
	cis-1,3-Dichloropropene	94.0	91.6	90.6	93.6	2.53		3.31
	cis-1,3-Dichloropropene	82.4	94.2	68.6	70.2	13.3		2.42
	cis-1,3-Dichloropropene	94.7	95.0	99.1	93.6	0.369		5.71
	Dibromochloromethane	97.8	94.4	93.3	94.6	3.49		1.44
	Dibromochloromethane	99.5	104	89.9	91.9	4.43		2.20
	Dibromochloromethane	102	103	110	108	1.12		2.57
	Ethylbenzene	99.0	96.0	93.2	96.0	3.13		2.85
	Ethylbenzene	97.6	108	91.1	91.2	10.4		0.0219
	Ethylbenzene	113	115	110	107	2.02		2.78
	m,p-Xylene	104	100	96.4	100	3.29		3.61
	m,p-Xylene	101	113	93.6	92.8	11.1		0.853
	m,p-Xylene	116	119	112	110	1.85		1.80
	Methyl-t-butyl ether	96.2	95.1	91.4	94.2	1.15		3.12
	Methyl-t-butyl ether	95.8	107	97.8	101	10.6		3.73
	Methyl-t-butyl ether	98.6	98.6	103	128	0.0507		18.3
	Methylene chloride	104	101	93.2	95.8	3.37		2.70
	Methylene chloride	96.2	107	110	110	10.8		0.727
	Methylene chloride	102	103	94.4	125	0.980		27.7
	o-Xylene	90.6	87.2	84.0	87.6	3.77		4.19
	o-Xylene	104	118	95.7	96.2	12.2		0.511
	o-Xylene	109	111	102	101	2.37		0.934
	Tetrachloroethene	104	101	99.9	102	2.83		2.28
Tetrachloroethene	105	111	97.4	96.5	5.84		1.00	
Tetrachloroethene	104	107	125	122	2.37		1.86	
Toluene	104	101	97.5	101	2.05		3.28	
Toluene	95.0	111	100	102	15.9		1.45	
Toluene	112	113	108	101	0.934		6.31	
trans-1,2-Dichloroethene	101	99.8	94.4	97.6	1.39		2.53	
trans-1,2-Dichloroethene	102	112	113	110	9.97		2.18	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision	MS	
							SMP		
EPA 8260D	trans-1,2-Dichloroethene	106	107	102	126	1.27		20.9	
	trans-1,3-Dichloropropene	98.8	94.6	93.0	95.4	4.29		2.49	
	trans-1,3-Dichloropropene	92.1	99.0	74.5	75.4	7.25		1.20	
	trans-1,3-Dichloropropene	86.2	87.6	98.4	93.1	1.50		5.54	
	Trichloroethene	103	100	94.8	98.0	2.66		3.28	
	Trichloroethene	98.6	112	108	108	12.5		0.0279	
	Trichloroethene	107	117	102	102	9.09		0.147	
	Trichlorofluoromethane	108	106	101	103	2.20		1.42	
	Trichlorofluoromethane	104	112	120	120	7.63		0.458	
	Trichlorofluoromethane	83.7	82.8	75.2	104	1.08		32.5	
	Vinyl chloride	94.4	93.8	89.2	92.6	0.691		3.65	
	Vinyl chloride	108	119	122	123	10.2		0.977	
	Vinyl chloride	87.9	87.6	92.2	122	0.342		27.7	
	EPA 8270E	1-Methylnaphthalene	93.0		95.1	90.1			5.40
		1-Naphthylamine	15.0		25.2	30.5			19.0
1,2,4-Trichlorobenzene		81.6		71.4	75.7			5.82	
1,2,4-Trichlorobenzene		83.8		86.3	85.7			0.698	
1,2,4,5-Tetrachlorobenzene		82.9		86.7	87.8			1.26	
1,3-Dinitrobenzene		102		106	108			1.31	
1,3,5-Trinitrobenzene		121		114	122			6.34	
2-Acetylaminofluorene		91.8		97.5	95.1			2.49	
2-Chloronaphthalene		83.0		78.2	81.1			3.57	
2-Chloronaphthalene		90.7		91.4	87.6			4.25	
2-Chlorophenol		82.1		73.6	76.1			3.37	
2-Chlorophenol		93.4		100	98.5			1.91	
2-Methyl-4,6-dinitrophenol		97.3		92.0	88.5			3.90	
2-Methyl-4,6-dinitrophenol		142		199	182			8.89	
2-Methylnaphthalene		91.4		91.7	86.4			5.95	
2-Naphthylamine		17.3		24.6	29.7			18.8	
2-Nitroaniline		94.8		97.9	94.1			3.96	
2-Nitrophenol		67.4		59.3	62.1			4.55	
2-Nitrophenol		95.3		97.4	97.2			0.206	
2-Picoline		80.0		89.5	78.4			13.2	
2,3,4,6-Tetrachlorophenol		126		134	129			3.75	
2,4-Dichlorophenol		88.2		79.6	84.8			6.28	
2,4-Dichlorophenol		86.8		96.3	91.6			5.00	
2,4-Dimethylphenol		75.8		73.4	78.2			6.44	
2,4-Dimethylphenol		67.4		86.7	88.2			1.72	
2,4-Dinitrophenol		137		132	127			3.24	
2,4-Dinitrophenol		80.8		158	146			8.36	
2,4-Dinitrotoluene		87.9		85.6	86.6			1.21	
2,4-Dinitrotoluene		96.2		97.1	95.0			2.19	
2,4,5-Trichlorophenol		99.1		106	98.8			7.13	
2,4,6-Trichlorophenol		85.4		82.6	86.9			5.10	
2,4,6-Trichlorophenol		90.9		102	96.7			5.14	
2,6-Dichlorophenol	98.3		105	105			0.381		
2,6-Dinitrotoluene	96.6		92.8	95.5			2.80		
2,6-Dinitrotoluene	91.5		93.8	90.8			3.25		
3-Methylcholanthrene	88.9		89.8	96.1			6.78		
3,3'-Dichlorobenzidine	105		74.8	65.9			12.7		
3,3'-Dichlorobenzidine	114		71.3	89.1			22.2		
4-Aminobiphenyl	71.5		61.6	77.8			23.2		
4-Bromophenyl phenyl ether	89.2		85.4	87.7			2.59		
4-Bromophenyl phenyl ether	93.4		93.0	98.6			5.85		

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
			LCS	SMP	SMP	MS
EPA 8270E	4-Chloro-3-methylphenol	95.1	87.8	93.5		6.31
	4-Chloro-3-methylphenol	89.1	95.2	94.0		1.27
	4-Chlorophenyl phenyl ether	88.4	86.1	88.2		2.39
	4-Chlorophenyl phenyl ether	88.3	89.3	87.5		2.04
	4-Nitrophenol	80.4	78.2	79.8		2.03
	4-Nitrophenol	56.9	68.7	63.1		8.50
	5-Nitro-o-toluidine	99.6	107	105		1.79
	7,12-Dimethylbenz(a)anthracene	94.0	89.7	92.0		2.53
	Acenaphthene	85.8	80.8	83.7		3.50
	Acenaphthene	92.3	94.3	90.7		3.89
	Acenaphthylene	83.6	78.9	82.7		4.65
	Acenaphthylene	88.2	93.0	89.6		3.72
	Acetophenone	89.3	104	96.0		8.10
	Aniline	105	115	110		4.98
	Anthracene	86.9	83.2	83.6		0.527
	Anthracene	93.5	99.0	102		3.28
	Azobenzene/1,2-Diphenylhydrazine	87.6	81.9	82.1		0.244
	Azobenzene/1,2-Diphenylhydrazine	95.8	96.6	96.5		0.104
	Benzidine	57.8	0.0	1.20		
	Benzidine	67.1	0.150	0.0500		
	Benzo(a)anthracene	101	94.4	91.0		3.58
	Benzo(a)anthracene	98.9	98.9	98.0		0.914
	Benzo(a)pyrene	85.0	80.5	78.6		2.39
	Benzo(a)pyrene	89.6	88.0	92.3		4.77
	Benzo(b)fluoranthene	103	70.5	81.2		13.9
	Benzo(b)fluoranthene	101	93.3	96.9		3.79
	Benzo(g,h,i)perylene	93.0	87.8	83.0		5.62
	Benzo(g,h,i)perylene	94.0	91.9	96.4		4.78
	Benzo(k)fluoranthene	65.5	92.4	77.0		18.0
	Benzo(k)fluoranthene	91.2	92.0	96.5		4.77
	Benzyl alcohol	102	108	106		1.31
	Bis(2-chloroethoxy)methane	77.3	68.4	70.8		3.39
	Bis(2-chloroethoxy)methane	85.4	88.2	88.6		0.452
	Bis(2-chloroethyl)ether	84.9	74.6	76.0		1.91
	Bis(2-chloroethyl)ether	73.0	78.3	74.3		5.24
	Bis(2-chloroisopropyl)ether	54.5	46.0	46.7		1.47
	Bis(2-chloroisopropyl)ether	95.4	101	96.7		4.75
	Bis(2-ethylhexyl)phthalate	111	102	105		3.44
	Bis(2-ethylhexyl)phthalate	107	109	111		2.09
	Butyl benzyl phthalate	104	95.5	91.4		4.45
	Butyl benzyl phthalate	103	106	106		0.188
	Carbazole	88.4	108	109		0.184
	Chrysene	100	91.9	89.1		3.02
	Chrysene	92.1	93.3	93.8		0.534
	Di-n-butyl phthalate	93.1	86.7	85.4		1.53
	Di-n-butyl phthalate	102	106	109		2.97
	Di-n-octyl phthalate	86.1	80.8	78.0		3.53
	Di-n-octyl phthalate	104	100	104		4.21
	Dibenzo(a,h)anthracene	90.8	85.6	81.8		4.54
	Dibenzo(a,h)anthracene	95.1	91.6	96.6		5.31
Dibenzofuran	93.9	95.6	91.1		4.82	
Diethyl phthalate	88.1	83.4	84.3		1.10	
Diethyl phthalate	103	107	102		4.02	
Dimethyl phthalate	90.2	87.2	89.7		2.76	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
		LCS	SMP	LCS	SMP	SMP	MS
EPA 8270E	Dimethyl phthalate	102		102	98.0		3.80
	Dimethylaminoazobenzene	95.0		85.9	88.4		2.87
	Dinoseb	119		157	153		2.13
	Ethyl methanesulfonate	88.0		102	94.0		7.97
	Fluoranthene	86.5		84.0	83.0		1.18
	Fluoranthene	95.4		97.6	102		4.11
	Fluorene	77.4		75.4	77.4		2.62
	Fluorene	89.0		92.0	88.3		4.10
	Hexachlorobenzene	90.0		84.8	86.3		1.68
	Hexachlorobenzene	90.6		90.0	93.3		3.60
	Hexachlorobutadiene	80.6		70.0	74.1		5.72
	Hexachlorobutadiene	72.4		80.8	80.9		0.124
	Hexachlorocyclopentadiene	83.9		48.0	38.1		23.0
	Hexachlorocyclopentadiene	51.3		53.1	42.5		22.2
	Hexachloroethane	75.4		59.7	56.4		5.72
	Hexachloroethane	77.7		87.6	87.4		0.229
	Hexachloropropene	86.9		92.5	88.6		4.31
	Indeno(1,2,3-cd)pyrene	90.5		85.4	81.9		4.16
	Indeno(1,2,3-cd)pyrene	93.1		90.2	94.5		4.66
	Isophorone	77.8		67.1	70.4		4.71
	Isophorone	86.7		89.5	89.3		0.224
	Isosafrole	93.3		96.5	94.5		2.09
	m,p-Cresols	100		102	107		4.77
	N-Nitrosodi-n-butylamine	89.9		94.5	91.9		2.79
	N-Nitrosodi-n-propylamine	73.4		62.8	64.4		2.52
	N-Nitrosodi-n-propylamine	100		99.7	107		7.34
	N-Nitrosodiethylamine	86.5		93.0	86.7		7.01
	N-Nitrosodimethylamine	58.9		49.9	48.3		3.34
	N-Nitrosodimethylamine	87.7		86.6	88.4		2.06
	N-Nitrosodiphenylamine/ Diphenylamine	128		120	123		1.97
	N-Nitrosomethylethylamine	83.4		91.9	83.3		9.82
	N-Nitrosomorpholine	83.4		98.8	92.7		6.37
	N-Nitrosopiperidine	87.9		100	93.0		7.55
	N-Nitrosopyrrolidine	74.8		72.8	69.0		5.36
	Naphthalene	80.2		70.2	73.4		4.57
	Naphthalene	88.6		89.4	89.2		0.224
	Nitrobenzene	73.5		64.1	65.9		2.77
	Nitrobenzene	97.4		94.9	95.5		0.630
	o-Cresol	85.8		95.7	97.7		2.07
	o-Toluidine	89.7		102	97.7		3.91
	Pentachlorobenzene	88.4		92.0	87.7		4.79
	Pentachloroethane	76.7		88.0	81.7		7.42
	Pentachloronitrobenzene	94.6		95.1	95.8		0.733
	Pentachlorophenol	73.0		75.1	74.7		0.534
	Pentachlorophenol	81.7		104	100		3.81
	Phenacetin	103		107	108		0.746
	Phenanthrene	87.6		84.8	84.4		0.426
Phenanthrene	95.7		96.7	101		4.25	
Phenol	70.6		65.1	66.3		1.83	
Phenol	70.3		72.9	73.9		1.36	
Pyrene	94.0		85.9	81.4		5.19	
Pyrene	95.7		99.2	98.8		0.404	
Pyridine	75.1		79.6	76.7		3.71	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS	SMP		
EPA 8270E	Safrole	93.3	96.5	94.5		2.09
EPA 8321B	4:2 Fluorotelomer sulfonate (4:2 FTS)	89.5	118	106		11.1
	4:2 Fluorotelomer sulfonate (4:2 FTS)	66.3	93.1	86.7		7.17
	6:2 Fluorotelomer sulfonate (6:2 FTS)	66.8	88.3	78.8		11.4
	6:2 Fluorotelomer sulfonate (6:2 FTS)	61.1	71.1	77.2		8.28
	8:2 Fluorotelomer sulfonate (8:2 FTS)	99.7	126	136		8.13
	8:2 Fluorotelomer sulfonate (8:2 FTS)	129	103	134		26.1
	Hexafluoropropylene oxide dimer acid	123	98.0	138		33.8
	N-Et perfluorooctanesulfonamidoAc acid	89.1	109	118		7.67
	N-Et perfluorooctanesulfonamidoAc acid	78.0	61.2	76.9		22.7
	N-Me perfluorooctanesulfonamidoAc acid	83.5	106	106		0.456
	N-Me perfluorooctanesulfonamidoAc acid	70.9	51.9	60.9		16.0
	Perfluorobutanesulfonic acid (PFBS)	93.0	117	117		0.0752
	Perfluorobutanesulfonic acid (PFBS)	72.7	66.8	71.4		5.27
	Perfluorodecanesulfonic acid (PFDS)	93.8	114	130		13.0
	Perfluorodecanesulfonic acid (PFDS)	87.6	50.7	71.3		33.7
	Perfluorodecanoic acid (PFDA)	81.6	124	162		26.9
	Perfluorodecanoic acid (PFDA)	87.6	59.7	82.2		31.7
	Perfluorododecanoic acid (PFDoA)	79.9	76.7	89.0		14.8
	Perfluorododecanoic acid (PFDoA)	56.6	63.9	88.5		32.3
	Perfluoroheptanesulfonic acid (PFHpS)	97.2	116	139		18.3
	Perfluoroheptanesulfonic acid (PFHpS)	92.9	74.5	96.4		24.0
	Perfluoroheptanoic acid (PFHpA)	60.4	92.8	87.2		5.54
	Perfluoroheptanoic acid (PFHpA)	49.0	47.5	53.6		8.45
	Perfluorohexanesulfonic acid (PFHxS)	82.8	97.5	109		7.66
	Perfluorohexanesulfonic acid (PFHxS)	82.2	67.7	101		32.6
	Perfluorohexanoic acid (PFHxA)	94.1	130	145		10.3
	Perfluorohexanoic acid (PFHxA)	118	91.6	129		29.7
	Perfluorononanesulfonic acid (PFNS)	78.0	96.2	96.3		0.126
	Perfluorononanesulfonic acid (PFNS)	57.9	39.3	57.8		38.1
	Perfluorononanoic acid (PFNA)	94.5	115	174		37.5
	Perfluorononanoic acid (PFNA)	110	101	125		21.5
	Perfluorooctanesulfonic acid (PFOS)	84.0	114	146		3.67
	Perfluorooctanesulfonic acid (PFOS)	64.1	32.8	60.5		19.9
	Perfluorooctanoic acid (PFOA)	87.1	120	115		4.52
	Perfluorooctanoic acid (PFOA)	61.8	53.0	64.7		8.16

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	SMP
EPA 8321B	Perfluoropentanesulfonic acid (PFPeS)	92.2	117	124		5.47
	Perfluoropentanesulfonic acid (PFPeS)	73.7	69.1	79.7		13.6
	Perfluoropentanoic acid (PFPeA)	101	103	122		13.8
	Perfluoropentanoic acid (PFPeA)	90.2	118	114		3.02
	Perfluorotetradecanoic acid (PFTeA)	95.8	135	130		3.79
	Perfluorotetradecanoic acid (PFTeA)	41.9	39.2	52.6		29.0
	Perfluorotridecanoic acid (PFTriA)	95.0	107	109		1.96
	Perfluorotridecanoic acid (PFTriA)	46.5	55.1	45.0		20.3
	Perfluoroundecanoic acid (PFUnA)	79.9	89.6	130		36.7
	Perfluoroundecanoic acid (PFUnA)	90.1	55.6	71.8		25.4

Reference Method Descriptions

Method	Description	Associated Samples
EPA 6020A	Metals, total recoverable, in solid samples using ICP mass spectrometry	2155784
EPA 6020A	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting RCRA Projects	2155789
EPA 7473	Mercury in aqueous samples using thermal decomposition, amalgamation, and AA spectroscopy.	2155788
EPA 7473	Mercury in solid samples using thermal decomposition, amalgamation and AA spectroscopy, reported as dry weight.	2155783
EPA 8260D	Volatile organic pollutants in acid preserved water matrices using GC/MS	2155791, 2155792
EPA 8260D	Volatile organic pollutants in soil matrix using GC/MS (heated purge - low level)	2155786
EPA 8270E	EPA Method 8270, Semi-volatile organic pollutants including PAHs, excluding PCBs and Toxaphene, in water matrices by GC/MS.	2155787
EPA 8270E	Semi-volatile organic pollutants, excluding PCBs and Toxaphene, in soil/sediments by GC/MS.	2155782
EPA 8321B	Perfluorinated alkyl substances in sediment/solid matrices by HPLC/MS/MS	2155785
EPA 8321B	Perfluorinated alkyl substances in water matrices by HPLC/MS/MS	2155790
SM 2540 G (20th)	Percent solid determination before the other sample preparations.	2155794

Preparation and Analysis Log

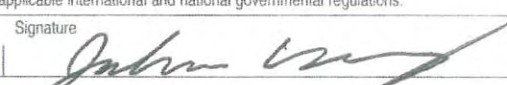
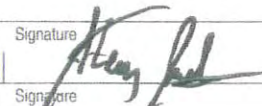
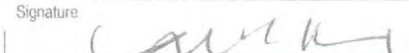
Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 6020A	02/07/2020	02/10/2020 13:30	Elliott D. Healy	02/13/2020 01:40	Alexander Thompson	2155784
	02/07/2020	02/10/2020 13:30	Elliott D. Healy	02/13/2020 19:55	Alexander Thompson	2155784
	02/07/2020	02/11/2020 14:00	Elliott D. Healy	02/19/2020 01:39	Justin Cutchin	2155789
EPA 7473	02/07/2020			02/12/2020 14:38	Vijayalakshmi Reddy	2155783
	02/07/2020			02/18/2020 13:43	Vijayalakshmi Reddy	2155788
EPA 8260D	02/07/2020	02/10/2020 10:53	Yi Lin Luo	02/11/2020 00:49	Yi Lin Luo	2155786
	02/07/2020	02/11/2020 14:00	Yi Lin Luo	02/11/2020 20:16	Yi Lin Luo	2155792
	02/07/2020	02/14/2020 10:30	Yi Lin Luo	02/14/2020 14:20	Yi Lin Luo	2155791
EPA 8270E	02/07/2020	02/13/2020 08:30	Hoor Shaik	02/14/2020 15:05	Mohammad Ghaffari	2155787
	02/07/2020	02/13/2020 08:30	Hoor Shaik	02/14/2020 16:48	Mohammad Ghaffari	2155787
	02/07/2020	02/13/2020 10:00	Hoor Shaik	02/14/2020 21:06	Mohammad Ghaffari	2155782
EPA 8321B	02/07/2020	02/10/2020 10:30	Pramila Ghimire	02/15/2020 00:02	Mohammad Ghaffari	2155785
	02/07/2020	02/14/2020 10:00	Hoor Shaik	02/18/2020 08:06	Mohammad Ghaffari	2155790

APPENDIX E
Final IDW Manifests

2

83044

↑	NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of 1	3. Emergency Response Phone 800-535-5053	4. Waste Tracking Number 27644
	5. Generator's Name and Mailing Address FDEP/Palm Beach State College 2600 Blair Stone Rd Tallahassee, FL 32399 Generator's Phone: 561 995-0900			Generator's Site Address (if different than mailing address) 4200 South Congress Ave Lake Worth, FL 33461	
↑	6. Transporter 1 Company Name Freshhold Cartage Inc			U.S. EPA ID Number NTD054126164	
	7. Transporter 2 Company Name			U.S. EPA ID Number	
↑	8. Designated Facility Name and Site Address Perma-Fix of Florida 1940 N.W. 67th Place Gainesville, FL 32653 Facility's Phone: 352-373-6066			U.S. EPA ID Number FLD980711071	
	9. Waste Shipping Name and Description	10. Containers		11. Total Quantity	12. Unit Wt./Vol.
↑	1. Non Regulated Material (IDW Water) PF #68888	No.	Type		
		002	DM	00110	G
	2.				
	3.				
↑	13. Special Handling Instructions and Additional Information Caller must I.D. Perma-Fix of Florida, Inc. Bill to GEO310. Site FDEP ID: ERIC_7408 <i>DFW WOOD H/141</i>				
	14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.				
↑	Generator's/Offeror's Printed/Typed Name Andrew Galvin (as agent of FDEP)			Signature <i>Andrew Galvin</i>	Month 10
					Day 2
↑	15. International Shipments	<input type="checkbox"/> Import to U.S.	<input type="checkbox"/> Export from U.S.	Port of entry/exit:	Year 19
	Transporter Signature (for exports only):			Date leaving U.S.:	
↑	16. Transporter Acknowledgment of Receipt of Materials				
	Transporter 1 Printed/Typed Name <i>James Spier</i>			Signature <i>James Spier</i>	Month 10
↑	Transporter 2 Printed/Typed Name			Signature	Day 02
					Year 19
↑	17. Discrepancy				
	17a. Discrepancy Indication Space				
↑	<input type="checkbox"/> Quantity	<input type="checkbox"/> Type	<input type="checkbox"/> Residue	<input type="checkbox"/> Partial Rejection	<input type="checkbox"/> Full Rejection
	Manifest Reference Number:				
↑	17b. Alternate Facility (or Generator)			U.S. EPA ID Number	
	Facility's Phone:				
↑	17c. Signature of Alternate Facility (or Generator)			Month	Day
↑	18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a				
	Printed/Typed Name <i>Scott H. Hoke</i>			Signature <i>Scott H. Hoke</i>	Month 10
↑				Day 10	Year 19

NON-HAZARDOUS WASTE MANIFEST		1. Generator ID Number FLEXEMPT	2. Page 1 of 1	3. Emergency Response Phone (813) 390-0859	4. Waste Tracking Number 0415-02
5. Generator's Name and Mailing Address F.D.E.P. 2600 Blair Stone Rd. Tallahassee, FL 32399 (850) 245-8700		Generator's Site Address (if different than mailing address) Palm Beach State College 4200 South Congress Ave. Lake Worth, FL (ERIC 7408)			
6. Transporter 1 Company Name A & D Environmental Services (SC), LLC		U.S. EPA ID Number SCD987598331			
7. Transporter 2 Company Name		U.S. EPA ID Number			
8. Designated Facility Name and Site Address A & D Environmental Services (GA), LLC 100 Waste Research Dr. Macon, GA 31206 (478) 788 - 8899		U.S. EPA ID Number GAR000007484			
9. Waste Shipping Name and Description		10. Containers		11. Total Quantity	12. Unit Wt./Vol.
		No.	Type		
1	Non Regulated Material, Solids (IDW, Drill Cuttings) Approval # GA2020136	016	DM	880	G
2	Non Regulated Material, Liquids (IDW, Development Water) Approval # GA2020135023		DM	1,265	G
3					
4					
13. Special Handling Instructions and Additional Information 0217 483741 12					
14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/picarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. 2004-0158					
Generator's/Offero's Printed/Typed Name Joshua Uvardsy, as agent of FDEP		Signature 		Month 4	Day 15
15. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.		Port of entry/exit: Date leaving U.S.:		Year 2020	
16. Transporter Acknowledgment of Receipt of Materials					
Transporter 1 Printed/Typed Name Stacy Smith		Signature 		Month 4	Day 15
Transporter 2 Printed/Typed Name		Signature		Year 20	
17. Discrepancy					
17a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection					
Manifest Reference Number:					
17b. Alternate Facility (or Generator)		U.S. EPA ID Number			
Facility's Phone:					
17c. Signature of Alternate Facility (or Generator)					
Month Day Year					
18. Designated Facility Owner or Operator Certification of receipt of materials covered by the manifest except as noted in item 17a					
Printed/Typed Name Mark Kurz		Signature 		Month 04	Day 17
				Year 20	

GENERATOR

TRANSPORTER INTL

DESIGNATED FACILITY